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DEPARTMENT OF CITY PLANNING 100 LARKIN STREET SAN FRANCISCO, CALIFORNIA 94102

SAN FRANCISCO CITY PLANNING COMMISSION

DRAFT
ENVIRONMENTAL IMPACT REPORT

RALPH K. DAVIES MEDICAL CENTER DEVELOPMENT PLAN
DUBOCE AND CASTRO STREETS

EE75.423
OCTOBER 15, 1976

Review Period
October 18 to November 18, 1976

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San Francisco City Planning Commission

Draft
Environmental Impact Report

Ralph K. Davies Medical Center
Development Plan

Case Number

EE 75.423

October 15, 1976

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Ralph K. Davies Medical Center development plan 1976.

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I. SUMMARY

A two phase improvement program is proposed for the Ralph K. Davies Medical Center located at Castro Street and Duboce. Phase I, the short-range development, includes:

- A fifth floor addition and rooftop helistop on Franklin Hospital;
- A new Research and Medical Office Building adjacent to Noe Street;
- A new two-story parking structure adjacent to Castro Street;
- Additional on-street parking along Noe Street.

Phase II, the long-range development (1980-1990), includes:

- A Developmental Disability Building adjacent to 14th Street;
- A new two-story parking structure adjacent to Noe Street.

The potential impacts associated with the proposed development include the areas of climatic effect (shadowing), noise generation associated with the helistop and construction operations, traffic generation, street parking, utilization of resources and energy, and visual changes.

SHADOWING

Additions to the Franklin Hospital and the new Research and Medical Office Building would cast shadows onto Duboce Park during late afternoon periods of winter, and on the church and several residences located on the north end of Noe Street during the afternoon in spring and fall. The new Developmental Disability Center building adjacent to 14th Street would shadow residences during

early mornings and late afternoons in summer. These impacts could be mitigated by relocation of the structures on the site and reduction of their overall size and height which is considered to be undesirable by the applicant.

NOISE

Use of the emergency helistop would result in unavoidable noise intrusions on local residents. Noise levels for light and medium turbine-powered helicopters would be equivalent to common noisy events such as the nearby acceleration of a truck or motorcycle; however, piston engine helicopters would be noisier. Mitigation measures would include restricting use of the helistop to turbine-powered machines, and logging flights to assure that only emergency cases are accommodated.

Construction-generated noise would increase ambient daytime noise levels for adjacent residents during all construction phases.

TRAFFIC

With completion of the total project (Phases I and II), traffic volume generated by the Medical Center would increase by about 55 percent. However, the increased volume is not expected to result in local congestion or to exceed the capacity of the adjacent intersections with present traffic control arrangements.

PARKING

Street parking in the vicinity of the Medical Center is often fully utilized during peak daytime hours by local residents and Medical Center users. Proposed on-site parking space for Phases I and II would provide capacity for the increased parking needs expected for Medical Center users, but may be under-utilized with continuance of present parking area policies. Several mitigation measures are discussed of which some are acceptable and some unacceptable to the Medical Center management.

RESOURCES AND ENERGY

Natural resources would be expended for construction of the new facilities. A continuing need for increased energy expenditure (equivalent to 11,000 barrels of oil per year) would result with completion of all proposed structures. The increased energy use can be partly mitigated with energy conserving design features.

VISUAL

The proposed additions and new structures would increase the mass of buildings on the site, but to a lesser extent than permitted

by the Planning Code or by the plan approved in 1965. Additions to the acute hospital building (the highest building on the site) and other proposed structures would alter views from adjacent residences. See Figures IV-7 to IV-10 for photographic views of the site with superimposed outlines of the proposed additions and new structures.

The report discusses several alternatives for the proposed project, including the "no project alternative", location of new facilities elsewhere, and alternative arrangements for the proposed elements on-site. Alternative arrangements for the Medical Research and Office building, the helistop and the parking structures, and the Developmental Disability buildings are also considered.

II. PROJECT DESCRIPTION

A. Location

The Ralph K. Davies Medical Center (hereafter referred to as the Medical Center) is a privately owned, non-profit hospital and health care complex occupying 7.2 acres on the eastern slopes of Buena Vista hill near the center of San Francisco. The Medical Center is located opposite Duboce Park and the downtown end of the Sunset Tunnel, a principal transit route to the Sunset District, and is bounded by Duboce Avenue and Castro, 14th, and Noe Streets. The site consists of all of Assessor's Block 3539 which is parceled into only one lot, Lot 1. The block is square and has a frontage of 560 feet on each bounding street (see Figure II-1, Page 5).

B. Objectives of the Project

The purpose of the project is to provide new facilities on the present site to enable the Medical Center to meet the needs for the types of health care services which the medical staff, administration, and Board of Trustees believe it can provide best, or most efficiently, in the light of changing conditions and circumstances which are placing greater emphasis on ambulatory care. In the first five-year phase of project development, these foreseeable needs would include a one-half floor addition to the acute hospital for executive office and resident quarters, a rooftop helipad for emergency and disaster use, a combined research and medical office building, and a two-level structural addition to the parking area at the southwest corner of the site to provide for on-site parking needs and Planning Code requirements. These facilities are intended to provide the Medical Center with the space and facilities for functions such as research, ambulatory care and emergency care, which are anticipated by the Medical Center administration to require increased physical support in the next five years.

The second phase of development, to be carried out after 1980, would place a new 62,000 square foot, five-story building at the south end of the main tier of buildings, where the 14th Street

FIGURE II-1

LOCATION OF
RALPH K. DAVIES
MEDICAL CENTER

parking lot is presently located. This building would be devoted to research, training and treatment of developmental disabilities such as autism,* cerebral palsy, and other neurological handicaps. There is presently no facility for treatment of developmental disabilities in San Francisco. Two levels of parking would be added to the Noe Street parking area to meet Planning Code requirements.

Instead of providing a basic acute hospital, the Ralph K. Davies Medical Center has developed and grown on the principle of comprehensiveness. It is a health care center devoted to a variety of health services--preventive, primary, diagnostic, rehabilitative, extended care, and emergency** as well as acute. Research, training, and demonstration are all aspects of such a medical center. Future development at the center is intended to be devoted to extending and enhancing its capability to provide knowledge and service in the field of health care.

The development plan is proposed at this time to enable the Medical Center to respond to neighborhood and community needs and to adjust efficiently to changes in health care. With the growth of ambulatory medicine as an increasingly important and significant proportion of the total services provided by a medical center, the Ralph K. Davies Medical Center has experienced a growth in outpatient use and a consequent increase in its need for parking facilities.

This increase in patient load has increased the accounting and medical records activities coupled with additional activity required by various governmental and insurance agencies such as Medicare and Medi-Cal. The increase in paper work, including record keeping, requires expanded space to enable the Medical Center to meet its community responsibility adequately and efficiently. The creation of new space for executive and administrative offices is proposed so that the medical records and business office activities may expand on the publicly accessible lobby level where they are now located.

Increased medical office space is planned to further provide for the demand by physicians for office space at medical centers in line with national and local trends. Such a location enables physicians to see more patients and provides ready access to diagnostic and treatment facilities provided by the Medical Center.

*Autism is a developmental disability and neurological disfunction affecting communication and behavior, characterized by a pervasive impairment of cognitive and/or perceptual functioning.
**Emergency services are provided on a 24-hour basis with a physician on duty at all times.

The Medical Center has responded to neighborhood requests and a need for 24-hour emergency room service which has resulted in an expansion of the average monthly patient load from 250 to 1000. It has also responded to a stated need of neighborhood residents (in response to a questionnaire circulated by the Medical Center in 1974 to evaluate its service relative to patient needs) by establishing a primary care physician service group for persons not having a personal physician. Visitations have risen to 550 per month after the first nine months of service, and are expected to increase to about 1000 per month.

The basic objective of the Ralph K. Davies Medical Center, as expressed in its development plan, is to continue to respond to neighborhood and community health care needs and to gain additional space--including parking--and internal flexibility to enable it to continue to meet currently foreseen as well as unforeseen needs over the years. The Medical Center is centrally located within the City and is served by major bus and streetcar transit routes.

In addition to local approvals, certain Medical facilities now require a Certificate of Need from the State of California under a new law regulating medical facilities and equipment. The Medical Center is in the process of applying for certification.

Phase I is estimated to cost $4,450,000 and Phase II is estimated to cost $2,540,000. The projects are expected to be financed by private funds and donations.

The project architect is Sokoloff, Hamilton, Bennett A.I.A., 244 Kearny Street, San Francisco.

C. General Description

The proposed project provides for on-site expansion of the existing Medical Center which was built in its present form between 1968 and 1971 on a site used for health care purposes since 1876. The present physical plant of the Ralph K. Davies Medical Center consists of five buildings. These are the Franklin Hospital, the Diagnostic and Treatment Center, the Extended Care Center, the Rehabilitation Center, and the Franklin Medical Office Building. All of these are interconnected by plazas and by corridors on the A and B levels beneath the plazas (see Figures II-2, II-3 and II-8, Pages 9, 11, and 22).

The existing plan for the Medical Center was the subject of a six-month review by the Department of City Planning and the City Planning Commission in 1964 and was approved as a Conditional Use by the City Planning Commission by Resolution No. 5803 on July 16, 1964 (see Appendix A, Page 140). Subsequent (continued to Page

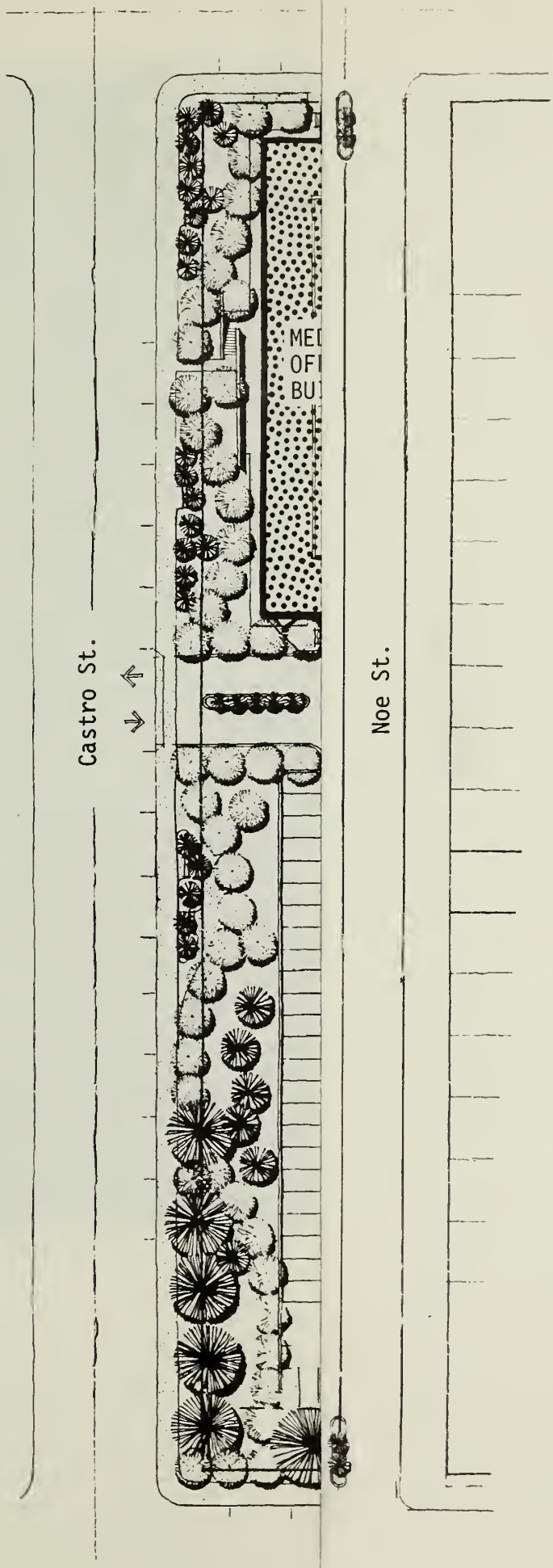


FIGURE II-2

EXISTING SITE PLAN OF RALPH K. DAVIES MEDICAL CENTER, 1975

Legend

Existing Buildings

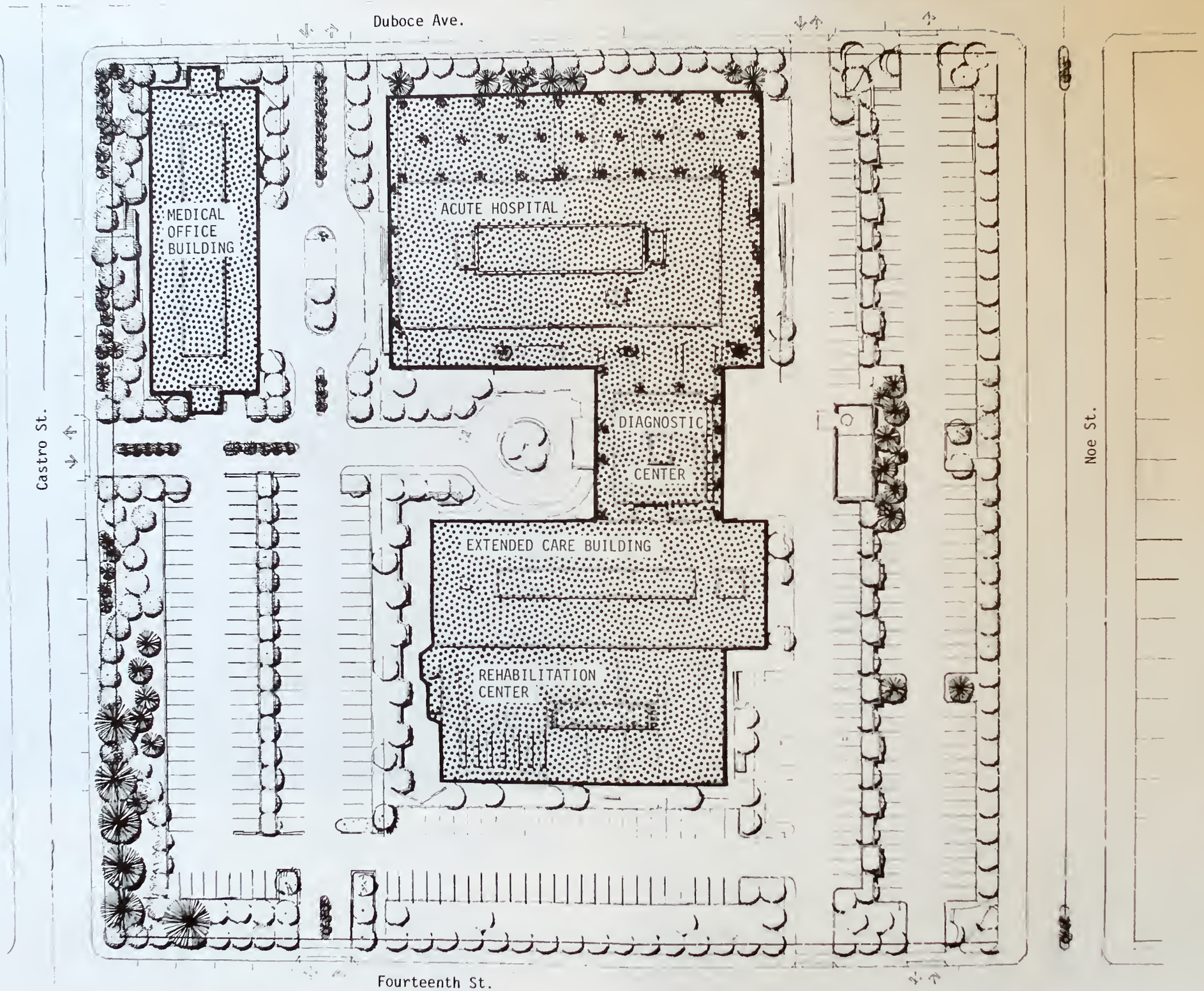


FIGURE II-2

EXISTING SITE PLAN OF RALPH K. DAVIES MEDICAL CENTER, 1975

Legend

Existing Buildings

FIGURE II-3 AERIAL VIEW, LOOKING NORTHWEST, RALPH K. DAVIES MEDICAL CENTER

modifications to the plan were approved by the Planning Commission on January 7, 1965, by Resolution No. 5852 (see Appendix B, Page 143). The Center was built to conform with the conditions set forth in the 1965 Resolution.

In accordance with Resolution No. 5852 of the City Planning Commission, the first phase of the Medical Center development was completed in 1971. In the ten year period since approval of the Medical Center Master Plan by the City Planning Commission, there have been changes in hospital and health care needs, principles, and technology. These changes include the decreased need for acute or extended care hospital beds, the increase in ambulatory rehabitation care and improvement of techniques, the development of specialized treatment technology utilizing high-cost equipment such as that used in kidney dialysis, radiation therapy, and nuclear medicine, and a trend by physicians to locate their offices at or adjacent to medical centers. These changes have led to the recognition by the Medical Center of a need for revisions to its Master Plan to accommodate the means for the Center to respond best to the evolving needs, and it is these revisions which constitute the present project.

The future building and development plan of the Ralph K. Davies Medical Center has been divided into two phases for implementation. The first, or short-range, phase is intended to be implemented between 1975 and 1980 (see Figure II-4, II-5 and II-9, Pages 13, 15, and 23. The second, or long-range phase is intended to be implemented between 1980 and 1990 (see Figure II-6, II-7 and II-10, Pages 17, 19, and 25).

1. Short-Range Development: The Phase I Development Plan (1975-1980)

The short-range development plan for the Ralph K. Davies Medical Center, intended to be implemented over the next five years, consists of four elements:

- A fifth floor addition to the acute hospital to accommodate executive offices relocated from the lobby level and resident physician facilities.
- A rooftop emergency helistop* on the acute hospital.
- A five-story, 45,000 square-foot research and medical office building.

* A helistop is "a minimum facility heliport, either at ground level or on a structure, without such auxiliary facilities as waiting room, hangar, parking, fueling, and maintenance". (Federal Aviation Administration, *Heliport Design Guide*, November 1969.)

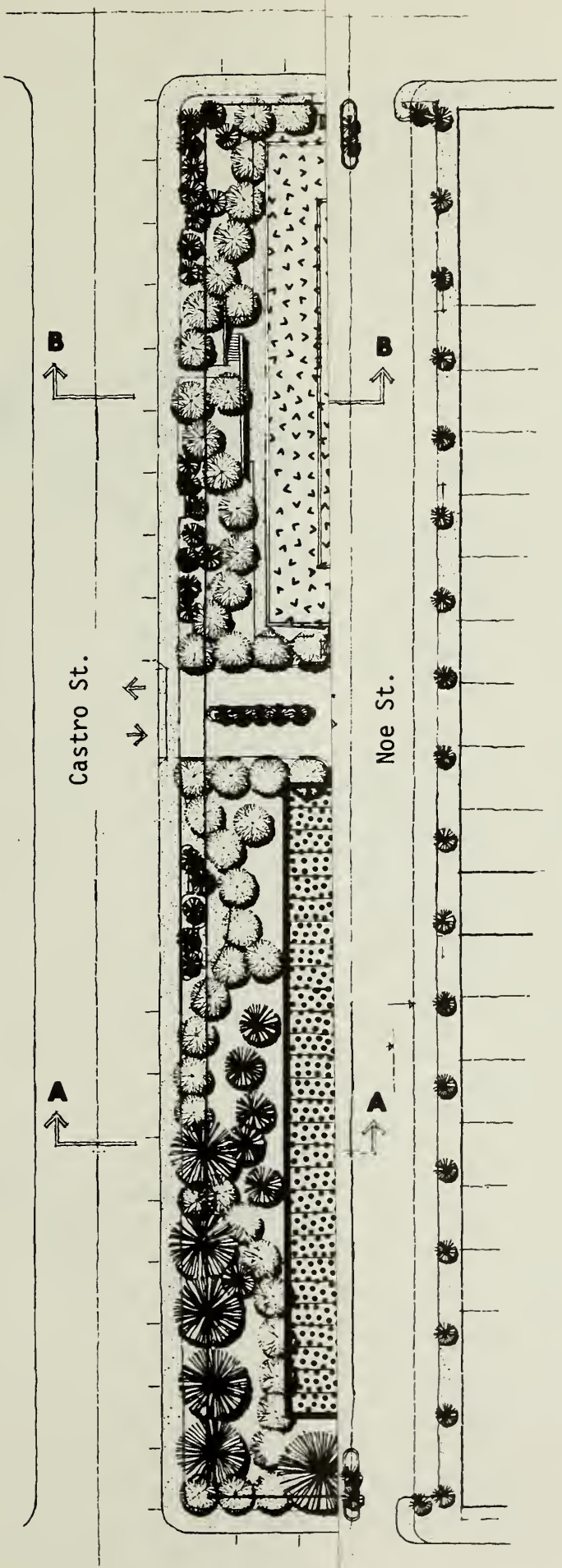


FIGURE II-4

SITE DEVELOPMENT PLAN OF RALPH K. DAVIES MEDICAL CENTER, PHASE I

Legend

New Structures

Existing Structures

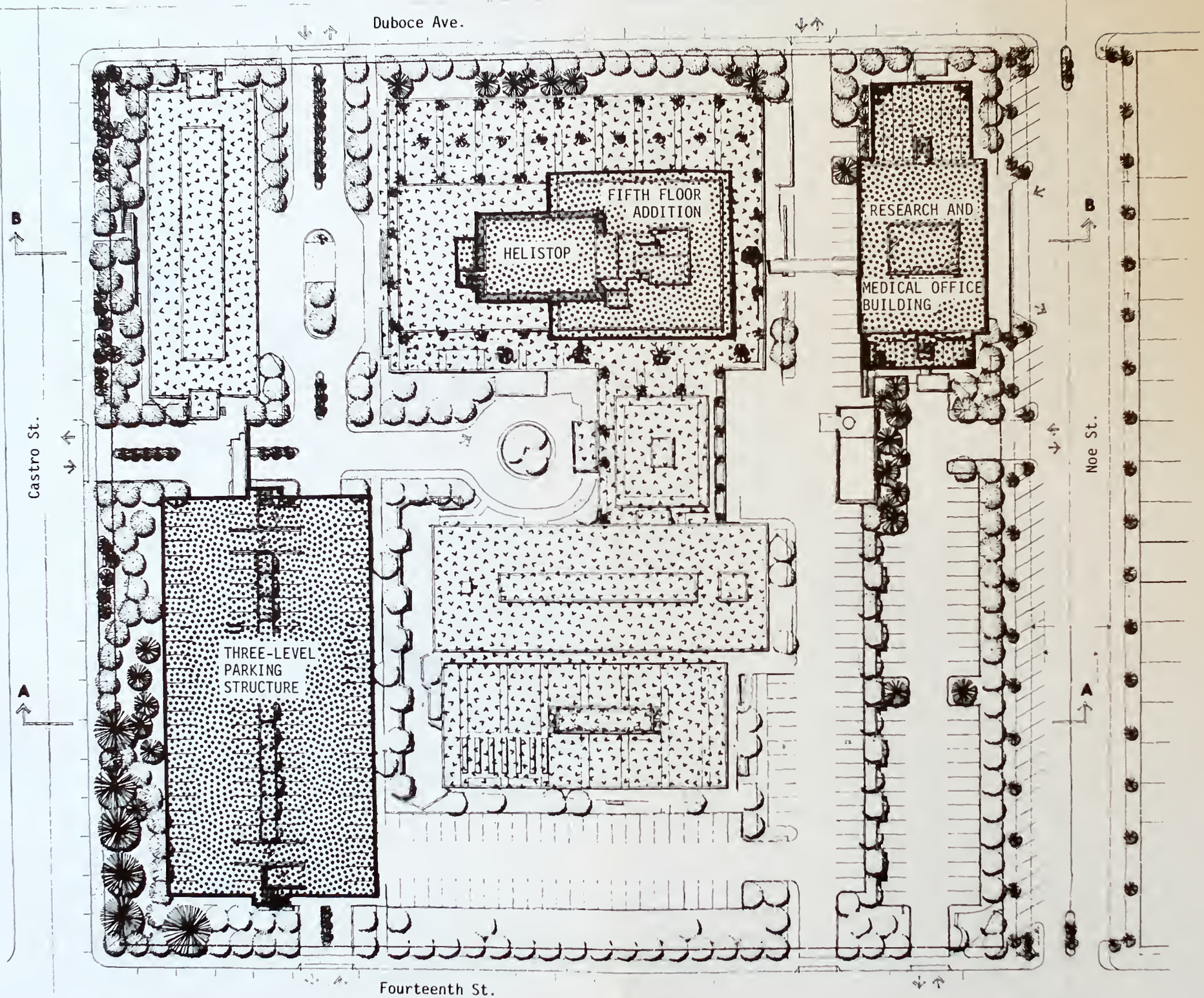


FIGURE II-4

SITE DEVELOPMENT PLAN OF RALPH K. DAVIES MEDICAL CENTER, PHASE I

Legend

New Structures

Existing Structures

NOTE: Cross section locations shown on Figure II-4

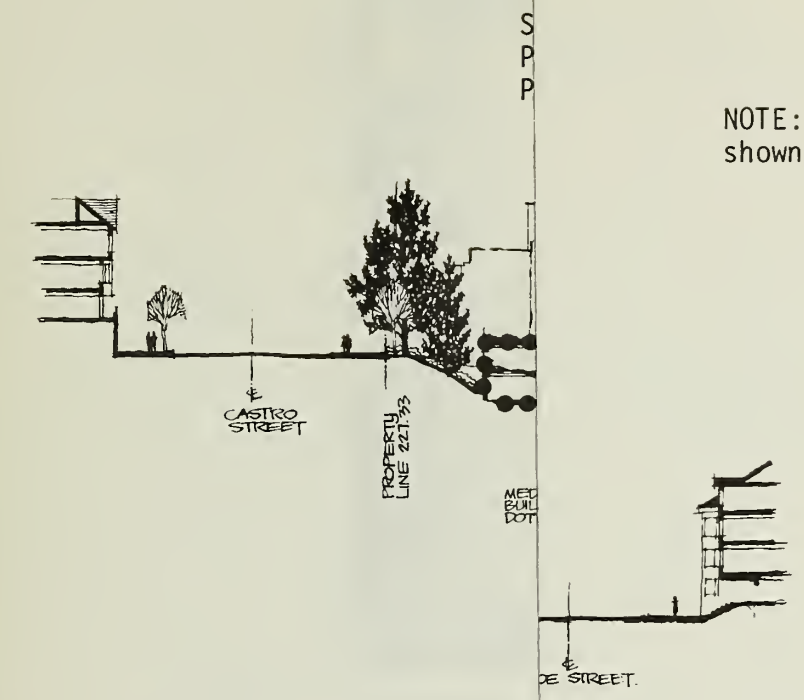
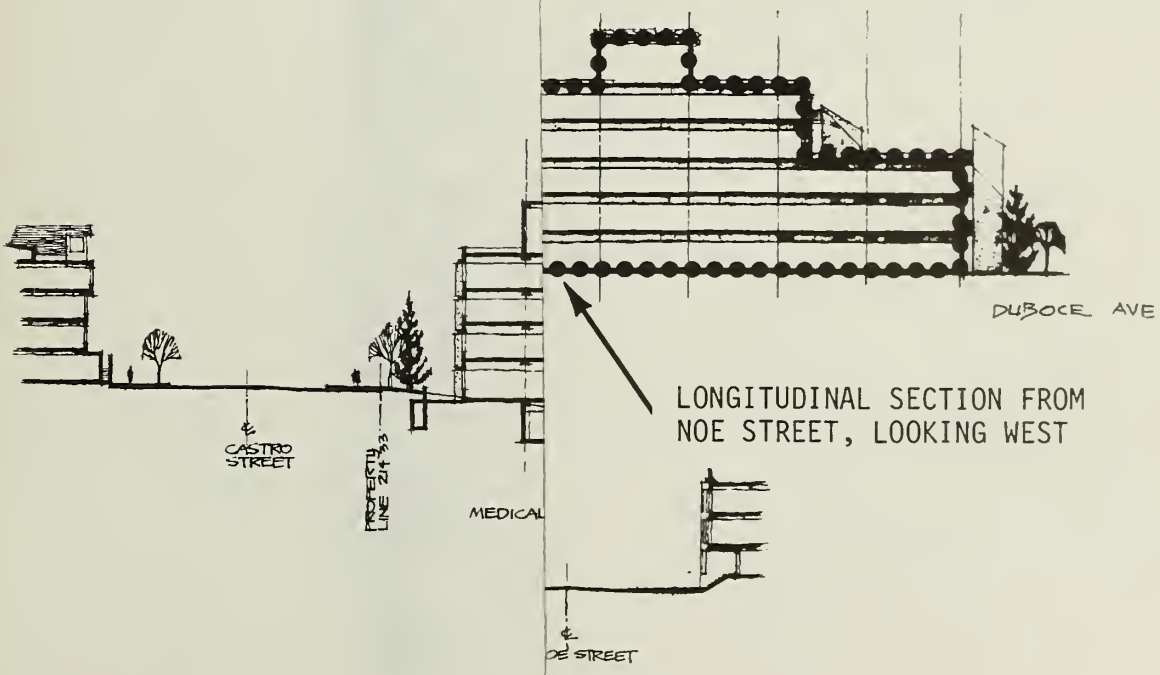
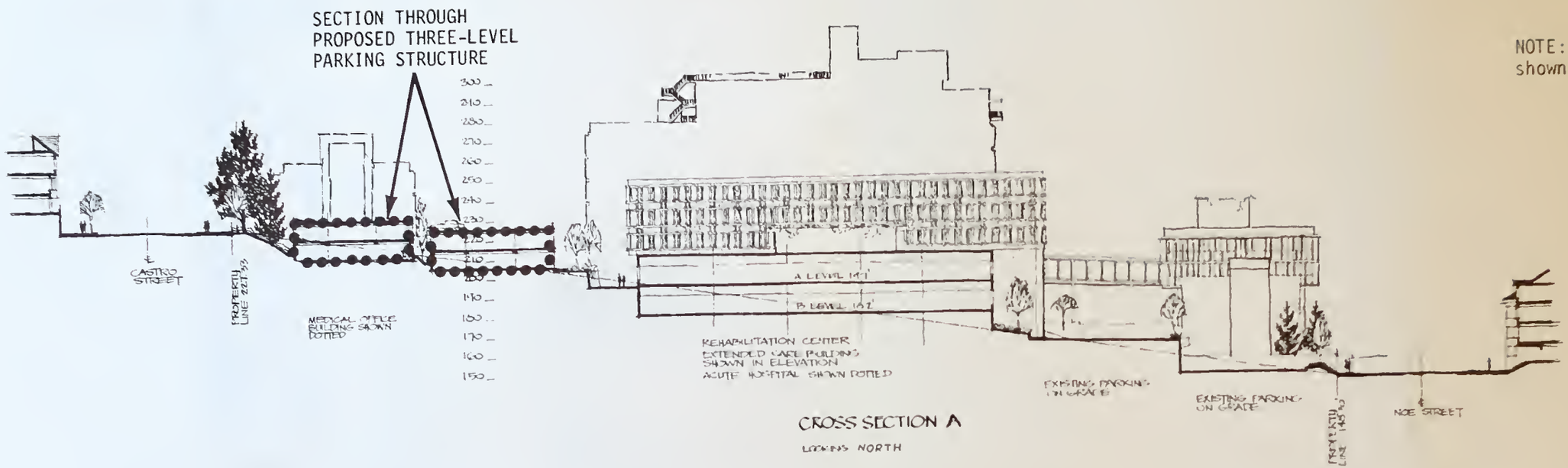


FIGURE II-5

CROSS SECTIONS OF PHASE I DEVELOPMENT PLAN



LONGITUDINAL SECTION FROM NOE STREET, LOOKING WEST



CROSS SECTION A

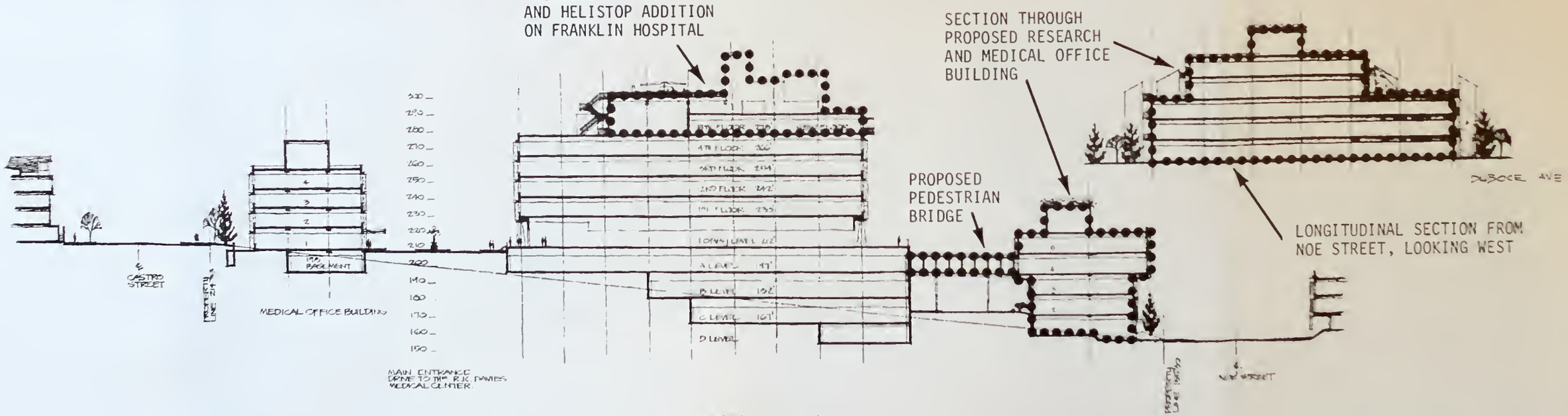
LOOKING NORTH

NOTE: Cross section locations shown on Figure II-4

FIGURE II-5

CROSS SECTIONS OF PHASE I DEVELOPMENT PLAN

0 32'



CROSS SECTION B

LOOKING NORTH

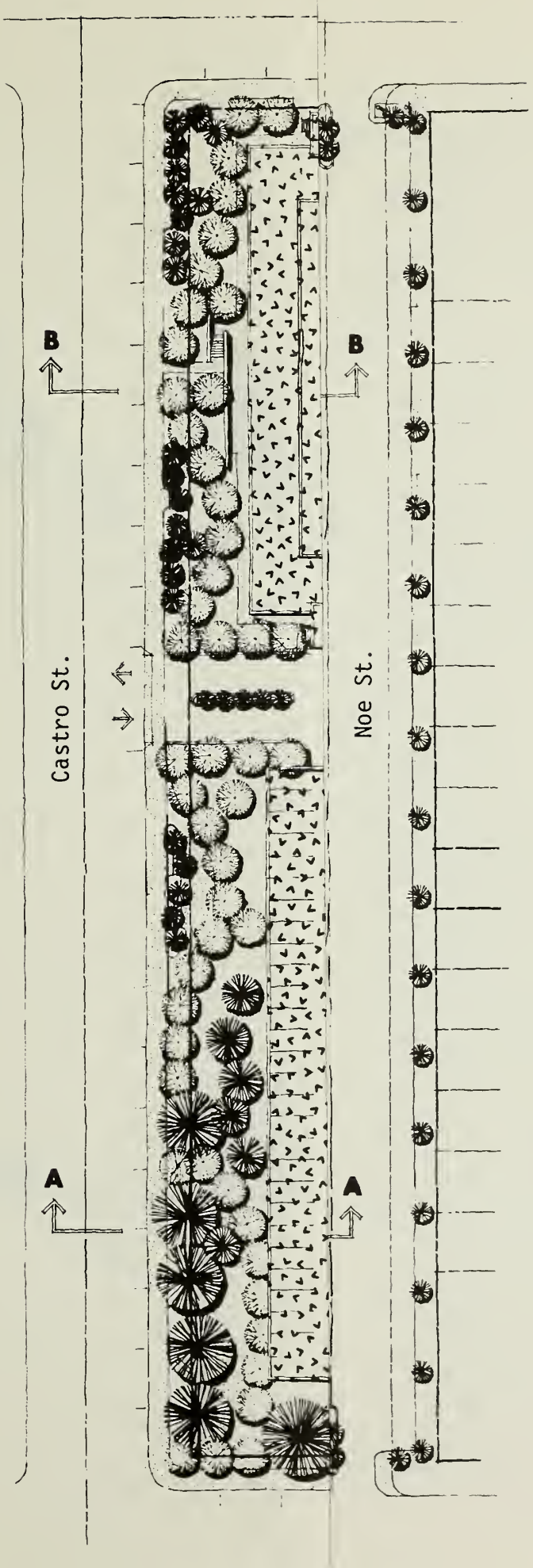


FIGURE II-6

SITE DEVELOPMENT PLAN OF RALPH K. DAVIES MEDICAL CENTER, PHASE II

Legend

New Structures

Existing Structures

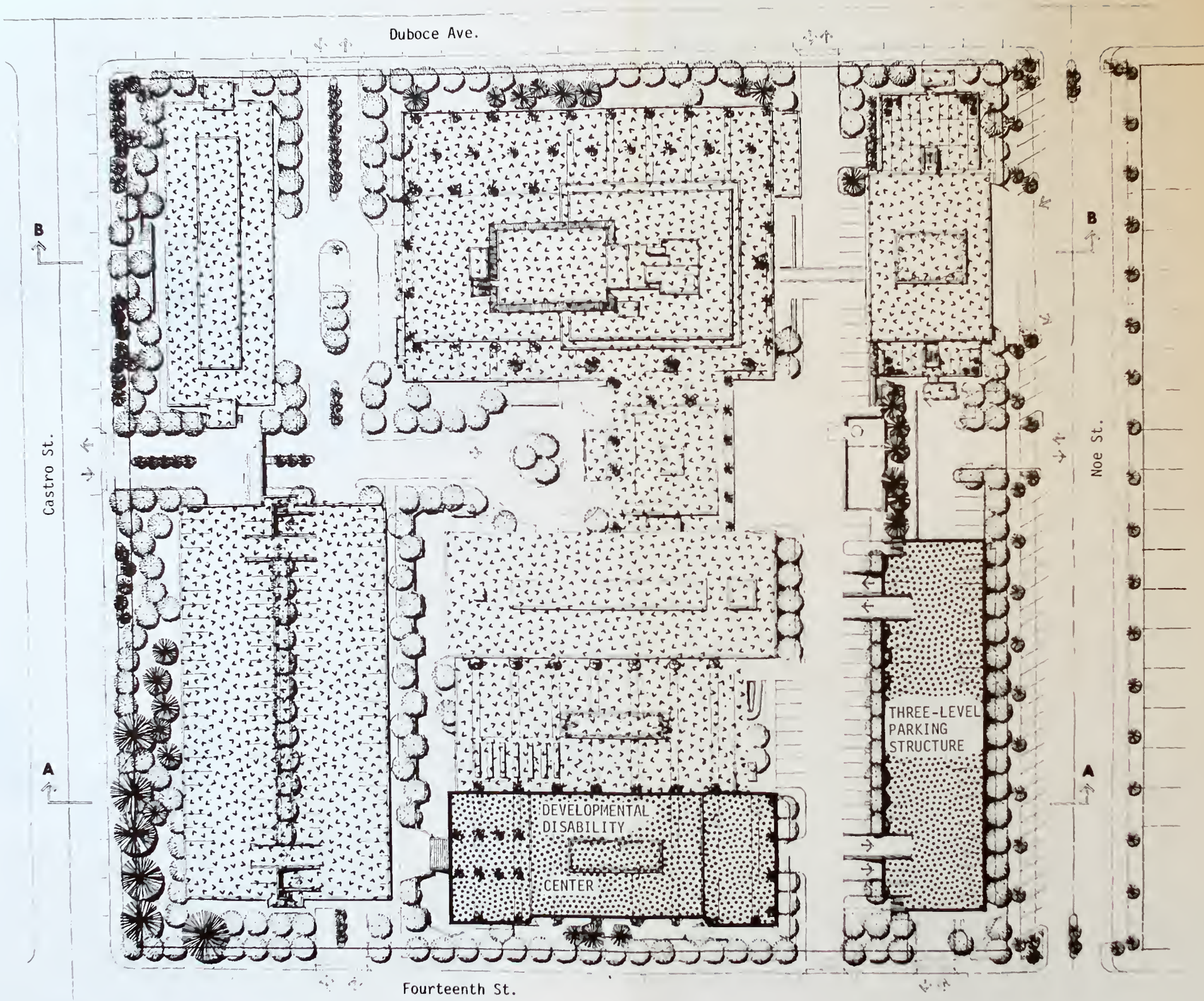


FIGURE II-6

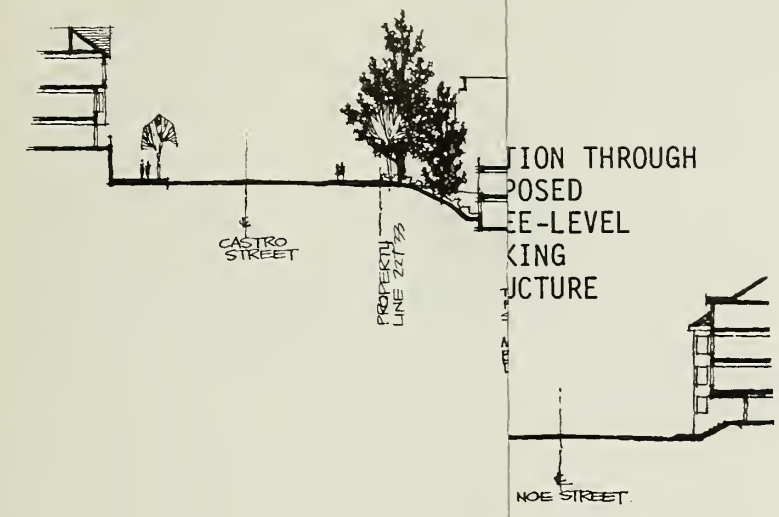
SITE DEVELOPMENT PLAN OF RALPH K. DAVIES MEDICAL CENTER, PHASE II

Legend

New Structures

Existing Structures

NOTE: Cross section locations shown on Figure II-6



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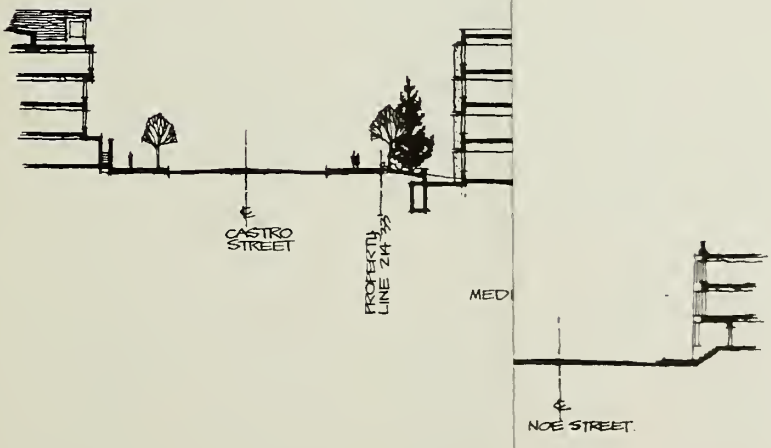
UCTURE

FIGURE II-7

CROSS SECTIONS OF PHASE II DEVELOPMENT PLAN

0 32'



NOTE: Cross section locations shown on Figure II-6

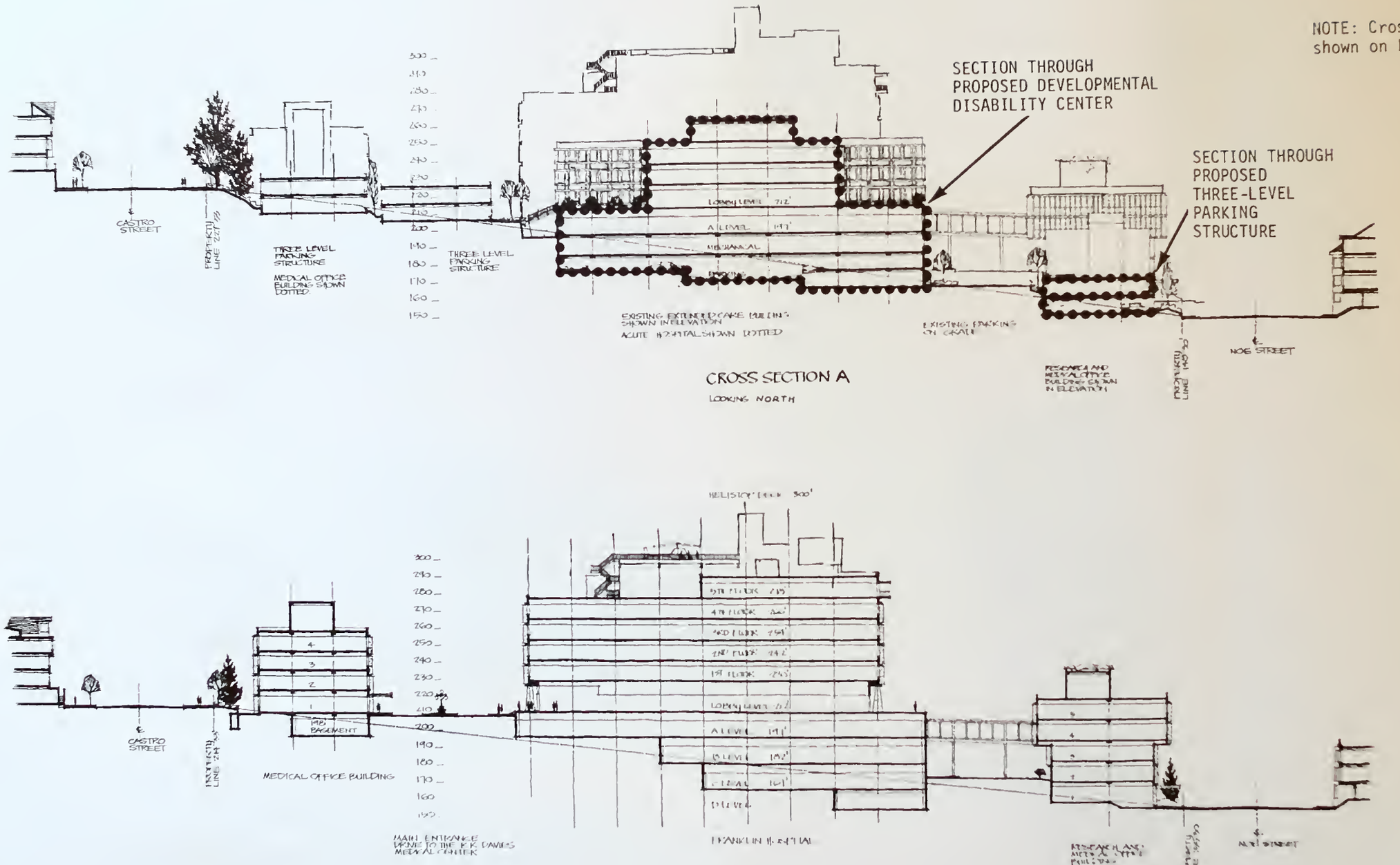


FIGURE II-7

CROSS SECTIONS OF PHASE II DEVELOPMENT PLAN

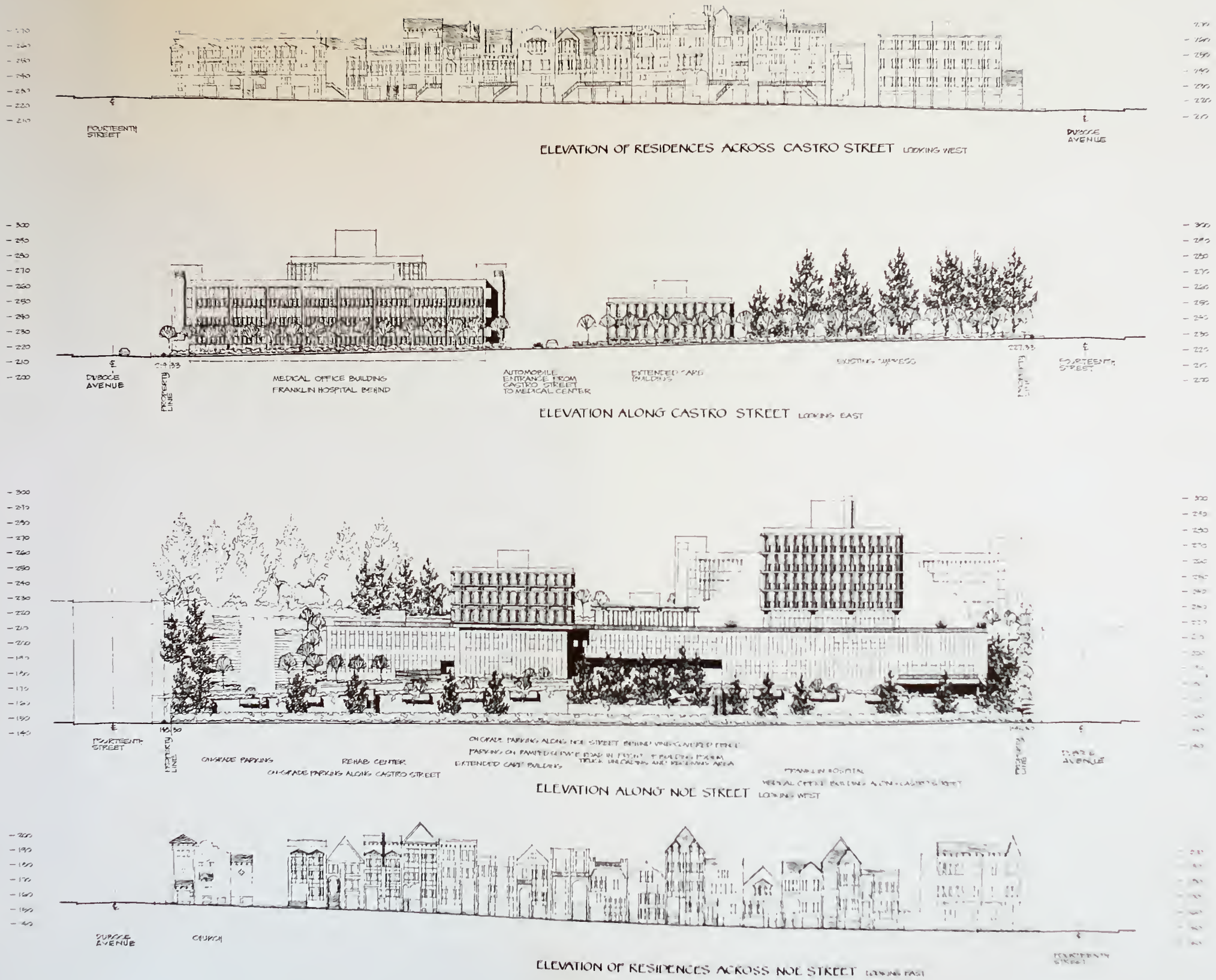


FIGURE II-8

EXISTING EXTERIOR ELEVATIONS OF RALPH K. DAVIES MEDICAL CENTER

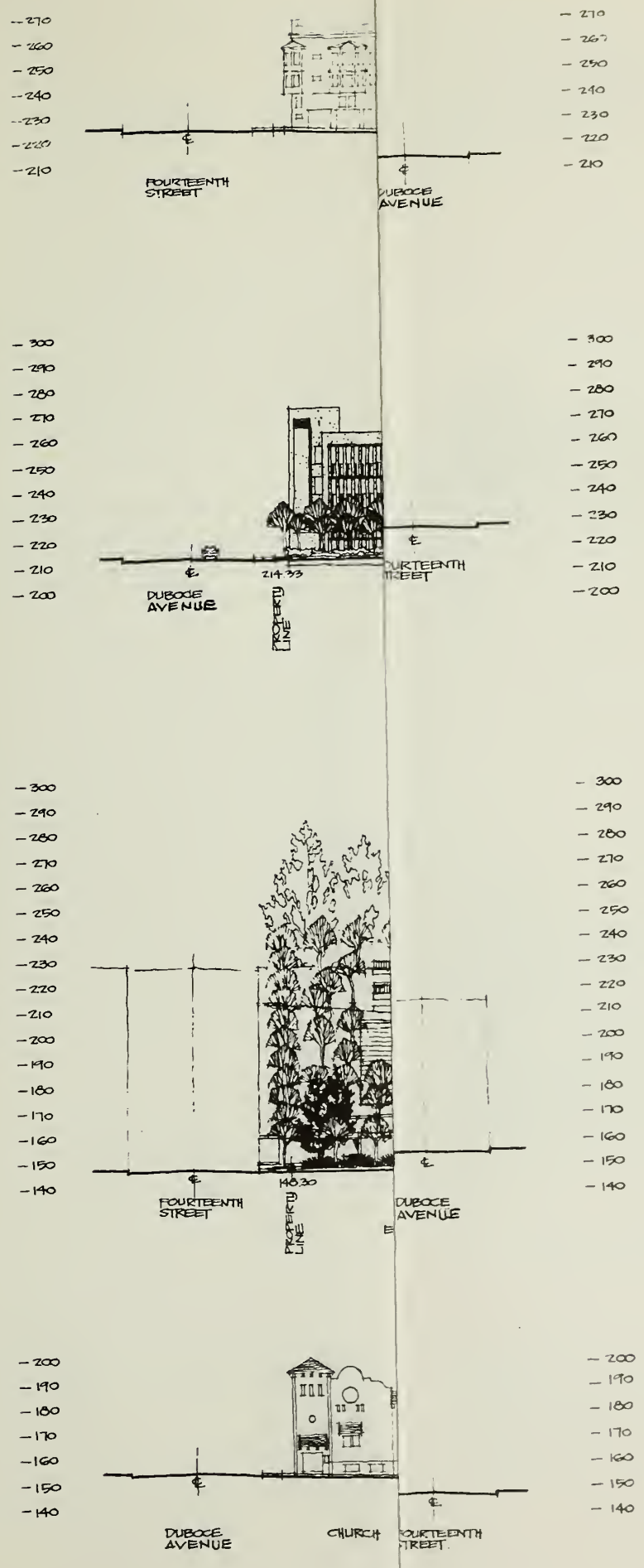


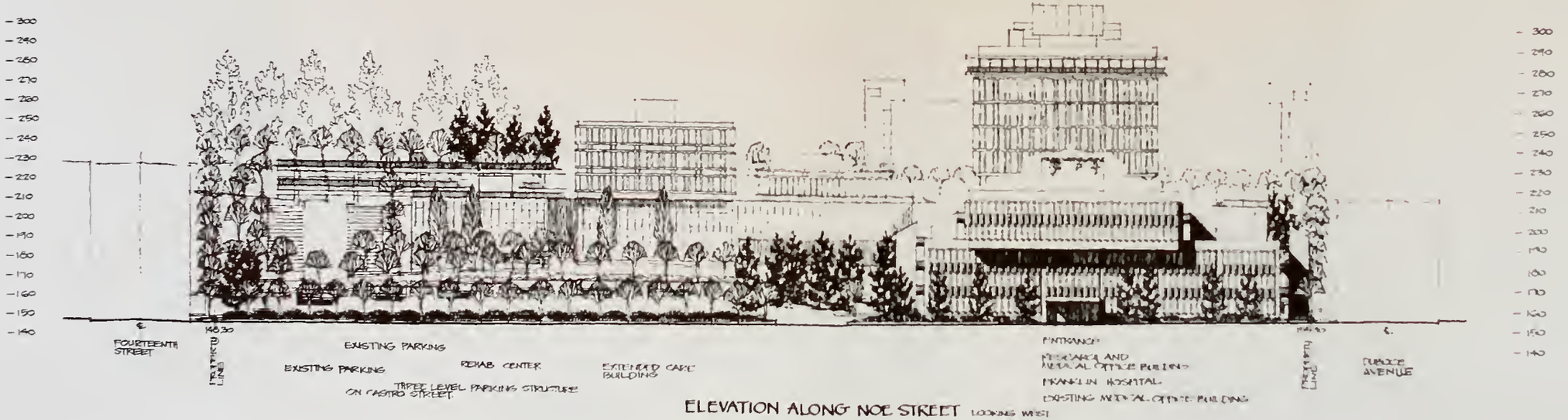
FIGURE II-9

EXTERIOR ELEVATIONS OF PHASE I DEVELOPMENT PLAN

0 32'

ELEVATION OF RESIDENCES ACROSS CASTRO STREET LOOKING WEST

ELEVATION ALONG CASTRO STREET LOOKING EAST



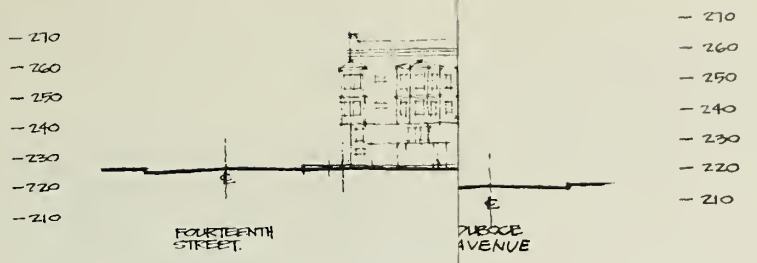
ELEVATION ALONG NOE STREET LOOKING WEST

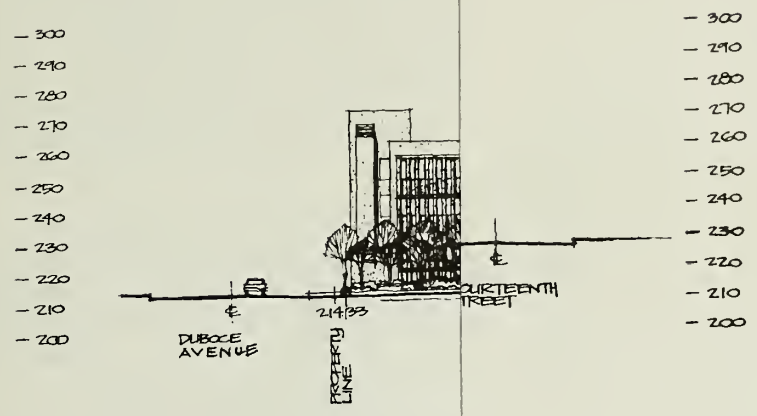
ELEVATION OF RESIDENCES ACROSS NOE STREET LOOKING EAST

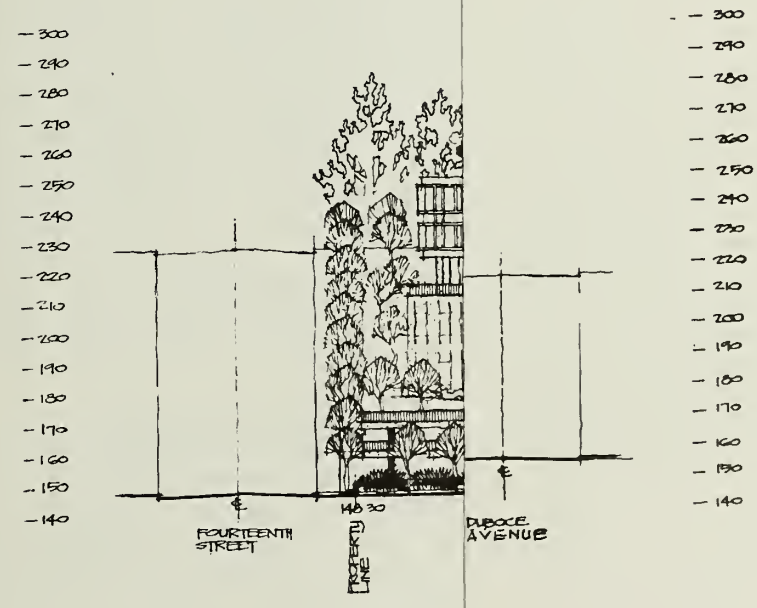
0 32'

FIGURE II-9

EXTERIOR ELEVATIONS OF PHASE I DEVELOPMENT PLAN







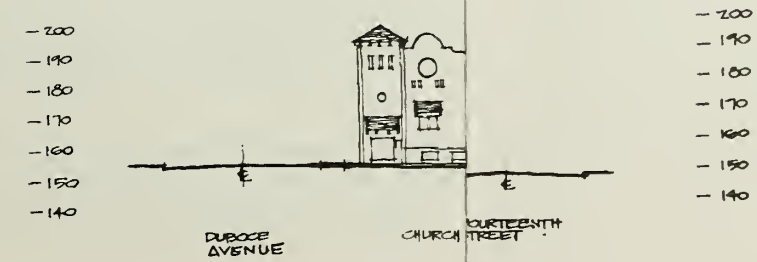
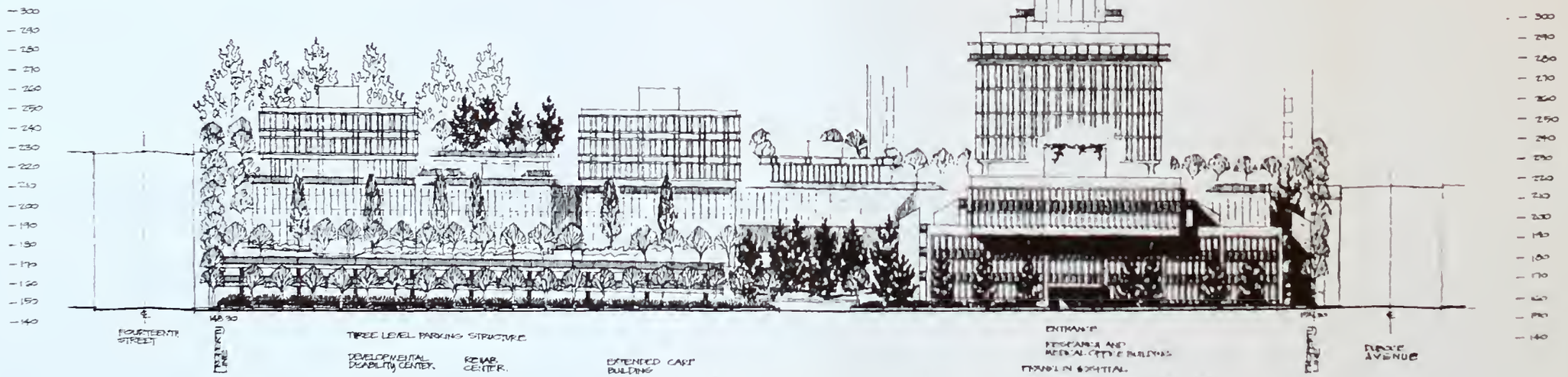


FIGURE II-10

EXTERIOR ELEVATIONS OF PHASE II DEVELOPMENT PLAN

ELEVATION OF RESIDENCES ACROSS CASTRO STREET LOOKING WEST

ELEVATION ALONG CASTRO STREET LOOKING EAST



ELEVATION ALONG NOE STREET LOOKING WEST

ELEVATION OF RESIDENCES ACROSS NOE STREET LOOKING EAST

0 32'

FIGURE II-10

EXTERIOR ELEVATIONS OF PHASE II DEVELOPMENT PLAN

- A parking structure providing three levels of parking on the site of the existing at-grade parking area at the southwest corner of the site adjacent to 14th and Castro Streets.

Each of the proposed additions is located within the 7.2 acre site of the Medical Center. There is no expansion anticipated now or in the future into the residential community surrounding the Center. In addition to the on-site development, diagonal on-street parking on the Noe Street frontage of the Center and related sidewalk area landscaping is intended to be developed by the Center as a part of the Phase I program.

The 1965 Conditional Use authorization provided for an addition of three floors, accommodating 120 beds, to the acute hospital building. Because additional acute care beds are not needed now or in the foreseeable future, the new short-range development plan represents a modification of that plan in two respects.

a. Fifth Floor Addition to Franklin Hospital. The first modification is a fifth-floor addition to the Franklin Hospital proposed as a half-floor addition located on the eastern portion of the present roof of the building. Containing 8,262 square feet wrapped around the mechanical and utility penthouse, it is designed to accommodate executive offices and five resident physician rooms. The space on the lobby level of the hospital that would be released by the relocation of the executive offices would be used for the consolidation and expansion of the business office, accounting, and medical record activities. The growth in outpatient care at the Medical Center, with a large volume and rapid turnover, requires expanded space and facilities for the administration of insurance, Medi-Cal and Medicare coverage, and the maintenance of related patient records which the proposed project would make possible. During the period from 1972 to 1976 the number of outpatients increased from 32,000 to 65,000, an increase of 100 percent.

b. Rooftop Helistop. The second modification is a rooftop helistop for emergency medical use only. The helistop would consist of a pad 51 feet wide and 69 feet long for the delivery of critically ill or injured emergency patients to the Medical Center. In the event of a disaster, such as a 1906-type earthquake, which would disrupt ground transportation, it would be used for the transportation of physicians, other medical personnel, and emergency equipment provided the facilities survived the earthquake.*

The helistop would be located above the existing mechanical penthouse. It would be partially above the new fifth floor and would extend horizontally a distance of 46 feet beyond the fifth

*The San Francisco Seismic Safety Investigation (Blume, 1974), using a scale of heavy, severe, moderate, and slight, rates the Ralph K. Davies Medical Center block as subject to slight potential damage.

floor addition over to the western edge of the existing mechanical and utility penthouse. The floor of the helistop would be at an elevation of 300 feet above City base, or, measured in terms of the 130 foot height permitted by the Planning Code, measured from the ground elevation, the helistop level would be at elevation 115. In relation to Noe Street, the lowest street bordering the site, it would be 146 feet above that street. The existing elevator stack which is presently enclosed in the overall rooftop mechanical penthouse would be extended upward to provide for direct elevator service to the new fifth floor and for direct access to the elevator by gurney* from the helistop. The elevator penthouse, with dimensions of 14 feet by 27 feet, would have a height of 27 feet above the helistop level, or 142 feet above Duboce Avenue, and 173 feet above Noe Street.

The rooftop helipad is referred to as a helistop** rather than a heliport, as helicopters would stop for the length of time required to unload patients, or to load and unload personnel in times of disaster rather than park for indeterminate times. The helistop would be available to any public or private delivery vehicle carrying patients requiring emergency care. As with ambulance vehicles operating on the ground level, the Medical Center would not own or operate any helicopter delivery service nor would it have any contractual relationship with helicopter services. It is anticipated by the Medical Center that use of the helistop would not exceed one to three landings per month*** and would be restricted to cases where its use would reduce the likelihood of mortality or residual complications. Likely cases would include disasters, the removal of victims in severe automobile accidents on the bridges and freeways when ground emergency vehicle access is impeded, or accidents in the Bay, Ocean, or at the Airport, when helicopters rescue the victims.

The helistop would be constructed in accordance with the guidelines established by the Federal Aviation Administration (FAA) and the Division of Aeronautics of the California Department of Transportation.+ Its design provides for a safety enclosure, as specified by the FAA and the State Division of Aeronautics, and for markings and lighting in order to provide for safety on the site. Directional and identifying "up-lights" would be recessed around the surface of the helipad, and shielded floodlights casting a down-light would be mounted on the elevator tower. These lights would only be used on approach of a helicopter.

*A wheeled stretcher.
**See footnote definition, Page 12.
***This estimate has been lowered from that contained in the report on the *Master Plan, Ralph K. Davies Medical Center*, August 1975, on file with the Department of City Planning, based on recent and current experience of other Bay Area hospitals with helipads (see Appendix C, Page 146).
+Federal Aviation Administration, Heliport Design Guide, November 1969, and Title 4, Chapter 9, California Administrative Code.

The establishment of an emergency helistop at the Ralph K. Davies Medical Center was first proposed in 1972 at a ground level location on the parking lot south of the Rehabilitation Center near the 14th Street frontage of the Medical Center site. The FAA found the proposal acceptable from an airspace utilization standpoint, a finding which is still applicable, leaving consideration of the physical development involved to the proper City authorities.* After public review, and discussion at two public hearings at which opposition was expressed by ten persons at the first hearing and seven at the second, including representatives of five neighborhood or special interest groups, the City Planning Commission by Resolution 6888 granted a six-month authorization. The Commission authorization was appealed to the Board of Supervisors which requested an Environmental Impact Report. Following the suggestion of a member of the Planning Commission, the advantages of a rooftop location were further evaluated by the hospital administration. These were found to include lower flight angles, less noise intrusion, and proximity to emergency triage** and treatment facilities. Construction of the rooftop helistop is now proposed as part of the addition to the acute hospital building. The combined cost of the fifth floor addition to the Franklin Hospital and the rooftop helipad is estimated to be $1,250,000.

The location of the city, State, Federal, and private hospitals and medical centers in San Francisco, and of helistops authorized or applied for, is shown on Figure II-11, Page 30.

c. Medical Research and Office Building. A third element of the short-range development plan is a combination research and medical office building at the southwest corner of Noe Street and Duboce Avenue on the site designated in 1965 for a research building (see Figure II-4, Page 13). Containing 45,000 square feet on five floors, approximately one half of the proposed building is intended to be used for medical offices and one half for medical research in fields such as microsurgery and gastroenterology. The building is designed to be linked by a bridge from the fourth floor over the existing parking area east of the acute hospital to the "A" level (one story below the lobby level) of the Franklin Hospital and Diagnostic Center (see Cross Section B, Figure II-5, Page 15.

The provision in the plan for additional medical office space reflects the trend in medical practice of relating offices for private patient visits to the medical center with which physicians

*See letter, C.G. Hand, FAA, October 17, 1973, Appendix C, Page 146.
**Triage is the sorting of and allocation of treatment to patients, especially disaster or war victims, according to a system of priorities designed to maximize the number of survivors.

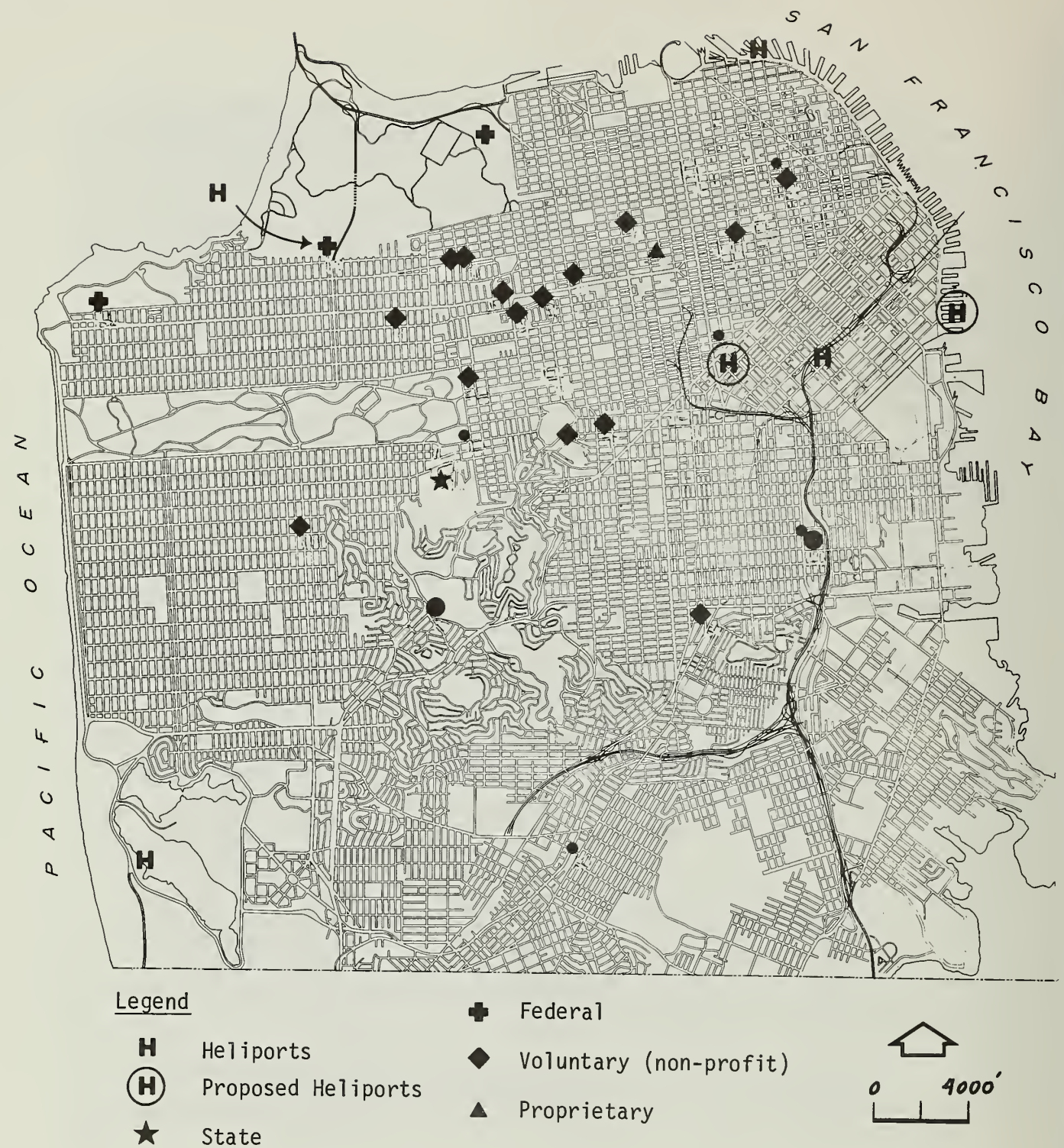


FIGURE II-11 LOCATION OF HOSPITALS AND OF HELIPORTS UNDER REGULATORY CONTROL OF THE STATE DIVISION OF AERONAUTICS IN SAN FRANCISCO

are affiliated rather than locating them in specialized downtown office buildings.

The trend has been reflected by continuing demand and requests for offices at the Ralph K. Davies Medical Center which the Center is unable to meet because the Medical Office Building at Castro and Duboce, which was completed in 1969, is fully occupied. The research space in the new building is intended to accommodate future expansion of current clinical and applied research activity which can occur only when space becomes available for this purpose. This activity includes microsurgical research. This research facility is one of the first established in the Nation, and is used for training physicians in this particular medical technology as well as advancing techniques of operating on blood vessels, tendons, and nerves under a microscope. Another research activity is in hemodialysis which is concerned with kidney treatment. Research at the Medical Center in the past ten years has reduced the time for hemodialysis treatment from six to four hours, thus lowering the costs to patients. Experimental subjects are not used in the research programs; however, patients are referred to the Center as a result of the specialized treatment capabilities.

The proposed building would have its main entrance on Noe Street at street level, accessible to the Muni Metro transit stop at the Sunset Tunnel portal. It would also have a ground level entry on the south side adjacent to the existing parking lot and the parking structure proposed in the long-range plan. The third means of access would be from the acute hospital connecting bridge on the fourth floor.

The first three floors of the building would extend the 180 foot length of the building, the fourth floor would be 110 feet in length with roof terraces at either end, and the fifth floor would be 110 feet in length (see longitudinal section on Figure II-5, Page 15). This setback of the upper levels is required to conform with the Planning Code requirements of the "65-D" height district in which the site is located, which sets a 110-foot limit on building lengths between the 40-foot and 65-foot elevations. It is estimated by the architects that this building would cost $2,300,000.

d. Parking Structure at 14th and Castro. The 1965 Master Plan for the Medical Center included a parking structure at the southwest corner of the site. The proposed Research and Medical Office Building would displace approximately 36 existing parking spaces on the lowest tier of at-grade parking, adjacent to Noe Street. As additional on-site parking would be needed for the new building to meet Code requirements, as well as general needs, construction of the new parking structure is included as one of the first steps in the short-range development plan. The structure is estimated to cost $910,000.

As shown on Figure II-4, Page 13, and in cross section on Figure II-5, Page 15, the 292-car capacity is evenly divided between the two sections of the structure. Principal access would be from the main

entrance drive off Castro Street, where the public parking area entrance is presently located, to the lower level of the structure and by connecting ramps to the upper levels of the structure. The easterly section of the structure would accommodate 145 cars and the westerly section would accommodate 147 cars. The present landscaped setback areas on Castro Street and 14th Street would be retained.

The elevation of the top floor level of the lower section is planned to be 227 feet above City base, and the top level of the upper section of the structure would be 232 feet above City base. In relation to the elevations of Castro Street this latter section would be from three to ten feet above this gradually sloping street, but below the first residential level of buildings on the west side of the street (see Figure II-9, Page 23). The total floor area in the Medical Center, by function, the number of parking spaces that would be required by the applicable Planning Code provisions, and the number of on-site parking spaces that would be provided by the short-range development plan as proposed, are shown on Table II-1, Page 33. This structure would result in 72 more off-street parking spaces than are presently required by the Planning Code. This excess number would be built in the first phase, however, so that there would be no subsequent disruption to its use by further, more costly, construction operations, and to respond to peak demands for space.

e. Noe Street Sidewalk Treatment. In addition to the above on-site development proposed in the short-range development plan, modifications to the sidewalk area and the on-street parking layout on Noe Street are intended to be carried out by the Medical Center as a part of the Phase I program. Three alternative treatments were initially proposed and presented by the Medical Center to neighborhood organizations in May 1974 (see Alternatives section). The one that provides the greatest number of spaces is shown on Figure II-4, Page 13. It provides for diagonal parking rather than the prevailing parallel parking. The Medical Center would pay the major portion, if not all, of the costs of this improvement, subject to authorization by the City Department of Public Works.

The existing 19-foot wide sidewalk would be narrowed to eight feet in width; the additional 11 feet would be utilized with the present eight feet used for parallel parking to provide diagonal parking. At the ends of parking stalls, bays would be provided for planting, brick paving and benches, and street trees would be planted in the sidewalk area. The present pattern of parallel parking provides for 23 parking spaces along the uninterrupted block-long curb frontage; the diagonal parking pattern would provide for 36 parking stalls and two curbcuts for driveways (see Figure II-4, Page 13). The sidewalk would be jogged onto the Medical Center site in the setback area in front of the Research and Medical Office Buildings.

TABLE II-1

PARKING SPACES REQUIRED AND PARKING SPACES PROVIDED UPON COMPLETION OF SHORT-RANGE DEVELOPMENT PLAN, RALPH K. DAVIES MEDICAL CENTER

Medical Center Facility	Ratio of Parking Spaces Required by Present Planning Code	Number of Parking Spaces Needed
Acute Hospital, 250 beds	1 car/5 beds	50 cars
Extended Care Facility, 100 beds	1 car/2 beds	50
Rehabilitation Center, 32 beds	1 car/2 beds	16
Medical Office Building 48,900 square feet	1 car/300 sq. ft.	163
Research and Medical Office Building:		
Research, 22,500 sq. ft.	1 car/1000 sq. ft.	23
Medical Offices, 22,500 sq. ft.	1 car/300 sq. ft.	75
TOTAL PARKING SPACES NEEDED		377 cars

Parking Facility	Number of Parking Spaces Provided
Existing on-grade parking along 14th Street	50 cars
Existing on-grade parking between 14th and Duboce	55
Existing parking on Noe Street Level	52
Proposed three-level parking structure at 14th and Castro	292
TOTAL PARKING SPACES PROVIDED	449 cars

f. Construction Sequence. Construction of the short-range development plan would be carried out in two increments. The first increment would include the additions to the Franklin Hospital building and the parking structure at the southwest corner of the site near 14th and Castro Streets. Construction time is estimated to take from 12 to 18 months.

The second sequence of construction activity would include the Research and Medical Office Building and the sidewalk and on-street parking, landscaping, and construction program. As the Research and Medical Office Building would displace 36 on-site parking spaces, its construction would be deferred until the new parking structure would be available for use. This phase of the program is estimated to take from 12 to 18 months for completion. It is anticipated that the entire short-range development program, if carried out as intended, could be completed by 1980.

2. Long-Range Development: The Phase II Development Plan (1980-1990)

a. Developmental Disability Center. In carrying out the long-range development plan as now proposed, the second extended care building originally authorized would be changed to a developmental disability research and treatment facility.

The building would contain facilities for training, evaluation, and care of various disabilities within different age groups, requiring different degrees of medical and paramedical treatment ranging from extended care to sheltered workshop types of training. All services now provided in various ancillary facilities within the Medical Center, such as X-rays, laboratory analyses, and therapy, would be utilized to assist in the diagnosis and treatment of developmental disabilities* or other conditions treated on an ambulatory basis.

The building would be constructed in the space, now used as a groundlevel parking lot for 50 cars, situated between the Rehabilitation Center and 14th Street (see Figure II-6, Page 17). It is designed to conform with the height and bulk regulations applicable to the site. The present bulk regulations are more restrictive than those imposed by the conditions adopted by the City Planning Commission in 1965.

The building would have five floors of use with the main entrance off the walkway on the west side of the building which extends northward by the Rehabilitation Center and Extended Care Building to the main entrance drive of the Medical Center. The lobby level of the

*i.e., neurological handicaps, such as cerebral palsy which require treatment modes similar to those for mental retardation.

building is at the same elevation as the lobby level of the Franklin Hospital. Two floors, the A and B levels, would be below the lobby level. The building would also provide 44 covered parking spaces on two levels which would be entered from the lower parking area on the east side of the main building complex in the Center. The exterior of the building would have an appearance similar to the existing buildings in the Medical Center so that it would appear to be an integral part of the whole (see Figure II-10, Page 25).

b. Noe Street Parking Structure. The second element indicated in the long-range development plan is a parking structure located on the lowest existing parking area level adjacent to Noe Street (see Figure II-6, Page 17). The structure is designed to contain three levels and to accommodate 56 cars on the lower level, 47 cars on the middle level, and 47 cars on the upper level, totaling 150 spaces. The structure would be set back 14 feet from Noe Street so as to retain the existing landscaped strip and the pine trees (see Figures II-2, Page 9, and II-3, Page 11). Access to the structure is planned on Noe Street at a point below the center line of the Diagnostic and Treatment Center and on 14th Street at the midpoint of the structure. The second and third levels of the structure are planned to connect with the open at-grade parking area along the east side of the main building complex of the Medical Center (see Figure II-7, Page 19).

The concept of this structure is subject to refinement and modification at the time of construction to meet specifically the needs of the developmentally disabled and the Center as a whole, and to comply with the Planning Code parking requirements then prevailing. It is intended that parking spaces required by the Planning Code would be provided at the time that each facility generating a requirement is constructed. This structure is included in the development plan at this time in order to provide for the parking spaces required for the total development plan by the Planning Code at the present time. A tabulation of the parking spaces required upon completion of the short- and long-range phases of the development plan and of the parking spaces provided in the plan as shown in Table II-2, Page 36.

TABLE II-2

PARKING SPACES REQUIRED AND PARKING SPACES PROVIDED UPON COMPLETION OF LONG-RANGE DEVELOPMENT PLAN, RALPH K. DAVIES MEDICAL CENTER

Medical Center Facility	Ratio of Parking Spaces Required by Present Planning Code	Number of Parking Spaces Needed
Acute Hospital, 250 beds	1 car/5 beds	50 cars
Extended Care Facility, 100 beds	1 car/2 beds	50
Rehabilitation Center, 32 beds	1 car/2 beds	16
Medical Office Building, 48,900 sq. ft.	1 car/300 sq. ft.	163
Proposed Research and Medical Office Building, Phase I		
Research, 22,500 sq. ft.	1 car/1000 sq. ft.	23
Medical Office, 22,500 sq. ft.	1 car/300 sq. ft.	75
Proposed Developmental Disability Center, Phase II		
Research/Training, 31,000 sq. ft.	1 car/1000 sq. ft.	31
Treatment/Offices, 31,000 sq. ft.	1 car/300 sq. ft.	104
	TOTAL PARKING SPACES NEEDED	512 cars

Parking Facility	Number of Parking Spaces Provided
Proposed three-level parking structure at 14th and Castro, Phase I	294 cars
Existing on-grade parking between 14th and Duboce	44
Parking under Developmental Disability Center, Phase II	44
Three-level parking structure at 14th and Noe, Phase II	150
TOTAL PARKING SPACES PROVIDED	532 cars

III. ENVIRONMENTAL SETTING

A. Geology, Soils and Seismicity

TOPOGRAPHY

The site lies at the foot of Buena Vista Peak, a 400 to 500 foot high hill whose crest lies about 2000 feet to the west of the property under consideration. Elevations in the project area range from 227 to 148 feet above mean sea level with the site sloping to the east at about an 8 percent grade (see Figure II-1, Page 5).

FOUNDATION MATERIALS

Bedrock in the project area appears, on the basis of the borings done to date (Woodward-Clyde-Sherard & Associates, 1964, 1965, 1966, and 1968 and Woodward-Clyde & Associates, 1969)* to be made up of very dense, highly fractured serpentinites,** sandstones, and shales belonging to the Franciscan Formation***. Immediately overlying these materials is 5 to as much as 45 feet of "stiff to hard" clays and "medium to very dense", generally silty or clayey sands. Over most of the property, the above-cited materials are covered by a blanket, up to 16 feet thick, of loose recent dune sand locally marked at its base by a layer of "soft" sandy clay. This sand blanket is generally capped by 1 to 16 feet of "poorly to moderately compacted" silty or rocky sand fill.

The foundation properties of the above discussed materials vary considerably. The fills and recent dune deposits have in the past been judged by the hospital's consulting foundation engineers to be unsuitable for foundation support due to their "low to moderate"

*These reports are on file for public review at the San Francisco Department of City Planning.
**Serpentinite: a metamorphic rock, blue-green in color, made up almost entirely of antigorite and chrysolite.
***Franciscan Formation: a common group of age-related bedrock materials found throughout the San Francisco Bay Region.

shear strengths and "moderate to high" compressibilities (Woodward-Clyde-Sherard & Associates, 1964, 1965, and 1966). The underlying Colma Formation materials and the Franciscan bedrock, on the other hand, have been found to have "very good" shear strengths and "low" compressibilities. Thus these materials were judged as able to provide good support for the foundations of the acute hospital and extended care buildings under consideration for construction in 1964 and 1965 (Woodward-Clyde-Sherard & Associates, 1964 and 1965). The engineering consultant indicated that the opinions, recommendations, and conclusions presented in the reports from which the above judgments were drawn should be reexamined in light of today's standards because, during the intervening years, "there have been substantial changes in the state of the art of the profession (soils engineering), as well as in the degree of risk considered acceptable by society and the profession".*

FAULTS AND SEISMICITY

There are no known active faults under the subject property or in the immediately surrounding area (Jennings, 1973; Brown, 1970). An inactive fault involving the bedrock material was discovered beneath the acute hospital site through borings made as part of the original foundation investigation for that structure in 1964.** The uniform variation and thickness of the overlying soil strata indicates that the fault has undergone no major movement since the first deposition of the Colma Formation 100,000 years ago. The material occurring within this fault zone has "good" engineering properties and should present no hazard to buildings placed over this zone.

Several faults in the San Francisco Bay Region could produce damaging levels of ground shaking in the project area.*** Some of the more important of these include the faults of the Palo Colorado-San Gregorio Fault Zone and the San Andreas, Hayward, and Calaveras faults. The Palo Colorado-San Gregorio Fault Zone and the San Andreas Fault lie 13 to 18 and 7 miles, respectively, to the southwest of the site under consideration. The Hayward and Calaveras faults, on the other hand, lie 14 and 32 miles, respectively, to the east of this

*Letter communication: William R. Hovey, Woodward-Clyde Consultants, July 15, 1975.
**This and the remaining sentences in this paragraph are based directly on the cited investigation (i.e., Woodward-Clyde-Sherard & Associates, 1964).
***This conclusion is based on the maximum credible earthquakes expected in these faults (Woodward-Clyde Consultants, 1975; Greene, *et al.*, 1973) and the shaking attenuation data presented in Page, *et al.*, 1972.

site. All of the above discussed faults are considered capable of producing earthquakes of Richter magnitude* seven or greater (Greene, *et al.*, 1973; Tudor, 1973).

Historically, the project site lies in an area of moderate siesmic activity. During the 160-year period from 1810 to 1969, six to ten earthquakes have shaken in this part of San Francisco with enough force to potentially cause damage ranging from cracked plaster and broken windows to partial collapse of some unreinforced masonry structures (California Division of Mines and Geology, 1972). During this same period, at least four earthquakes (i.e., those of 1836, 1838, 1868, and 1906) shook this region hard enough to potentially destroy or severly damage most masonry structures and even some well constructed wooden ones.**

B. Hydrology and Water Quality

About 75 percent of the Medical Center site is presently covered by buildings and pavement which constitute an essentially impervious surface. The remaining 25 percent is landscaped; however, the proportion of the area which is subject to water percolation is smaller than the above numbers might suggest for nearly half this landscaping is in planters which may drain to the paved surfaces. Virtually all precipitation leaves the site as surface runoff. Such runoff is collected in the City's combined storm and sanitary sewer system. This dual-purpose sewerage arrangement of the City produces wet weather flows in excess of the treatment plant capacity causing untreated sewage to be discharged into San Francisco Bay or the Pacific Ocean during rainy weather. The part of the City containing the project area is served by the North Point Water Pollution Control Plant which presently has its outfall in the Bay.

C. Vegetation and Wildlife

Vegetation in the area consists of plots of landscaping associated with residential development and landscaped city parks.

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*Richter magnitude: a logarithmic measure of the total amount of energy released by an earthquake. Richter magnitudes of 6.5 to 8.3 have been associated with the major shocks that have occurred in the San Francisco Bay Region in the last 160 years. Lesser but still damaging shocks have had Richter magnitudes between 4.8 and 6.5.

**This conclusion is based in part of the historic record (Tocher, 1959) and in part on the distance of this site from those portions of the San Andreas, Hayward, and Calaveras faults which produced the six largest earthquakes that have occurred in the San Francisco Bay Region in the last 160 years.

Wildlife habitat is restricted by the extent of the vegetation and by the fact that much of the landscape vegetation consists of non-native species of limited value to native wildlife.

The Medical Center site is edged with landscaped setback areas and has planter boxes and landscaped strips at the edges of the paved parking areas and the structures. The on-site vegetation consists almost entirely on non-native trees, shrubs and vines. With the exception of about a dozen mature Monterey cypress near the the intersection of Castro and 14th Streets, the trees are 10 to 20 feet high because of the relative recentness of planting efforts. The native tree types noted* were Coast redwood, Coast live oak, Monterey cypress and Monterey pine, which were all planted. Other tree species noted include Deodar cedar, olive, bush cherry, golden wattle, silver birch, red gum eucalyptus, and poplar, all of which are landscape species not native to the area. In addition to the trees, groups of decorative and flowering shrubs have been planted including pyracantha, French broom, and juniper. There are several varieties of ivy covering the ground and trailing over the fences and retaining walls.

Because landscape vegetation is generally non-native, the native insect population is minimal. Thus, insect-eating wildlife are not plentiful. For example, the bird population consists mostly of English sparrows, house finches, and mockingbirds, all species which are adapted to man-made situations and areas of frequent human disturbance. Even these birds, however, are present only in small numbers. Other wildlife forms are absent.

No recognized rare or endangered plant or animal species were noted by Mr. Lindenmeyer nor is it expected that any might be associated with the site (Leach, *et al.*, 1974; Powell, 1974).

D. Meteorology and Air Quality

CLIMATE

The Medical Center experiences the breezy climate common to all locations near the Golden Gate. Based on data from downtown San Francisco, the dry season is accompanied by the highest mean daily wind speeds of the year, with values averaged over a 24-hour period exceeding ten miles per hour from May through August (see Table III-1, Page 41). Of relevance to the proposed helicopter operations at the Center, is the hourly profile of mean winds, shown

*Vegetation survey by T. Lindenmeyer, staff ecologist, Environmental Science Associates.

TABLE III-1

WIND CHARACTERISTICS*

Month	Mean Speed (mph)	Prevailing Direction**	Fastest One Minute Average Speed (mph) / Direction	
January	6.7	North	47	Southeast
February	7.5	West	47	Southwest
March	8.5	West	44	South
April	9.5	West	38	West
May	10.4	West	38	West
June	10.9	West	40	West
July	11.2	West	38	West
August	10.5	West	34	West
September	9.1	West	32	West
October	7.6	West	43	Southeast
November	6.3	West	41	South
December	6.5	North	45	Southeast

Source: U.S. Department of Commerce, 1974, Local Climatological Data.

*Wind instrumentation located 1.4 miles northeast of the Medical Center (downtown San Francisco).
**Direction from which the indicated wind blows.

in Figure III-1, Page 43. The diurnal fluctuation in wind speed in January is about two miles per hour (mph). The sunrise-to-late-afternoon change in July is nearly 10 mph, with mean 5 P.M. values exceeding 17 miles per hour. Table III-1, Page 41, shows that on occasion observed wind speeds (averaged for one minute periods) can reach strengths much higher than those indicated by daily or hourly means. Gust information, if it were available for the area, would undoubtedly show even higher peak wind values for each month.

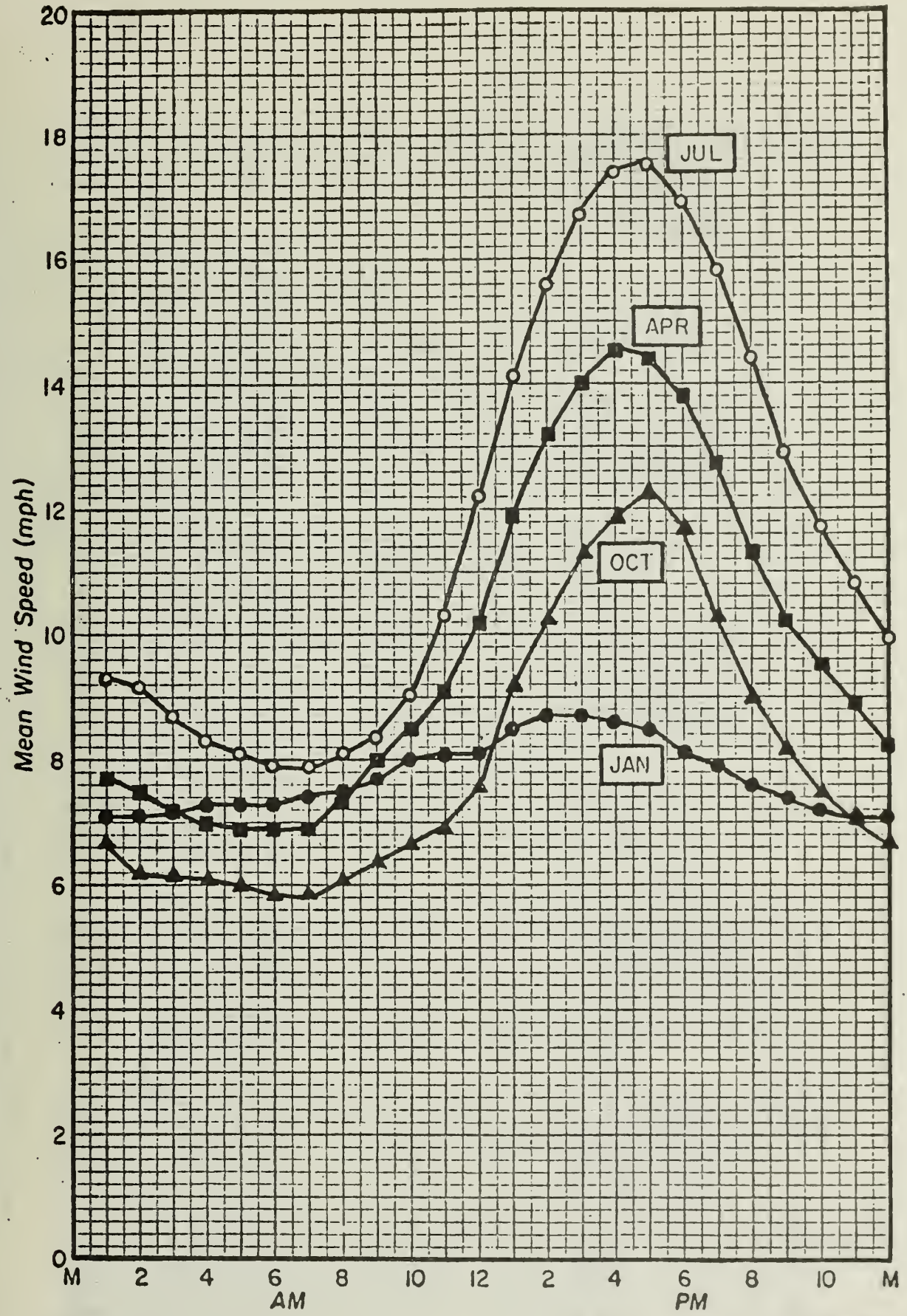
In addition to the broad-scale features of the wind regime that are common to all portions of San Francisco, there is evidence that the site experiences turbulence caused by air flowing over and around Buena Vista and Corona Heights. The crests of these hills lie about 0.4 mile west and west-southwest of the Center and comprise the northern portion of San Francisco's central highlands. The hills act as a partial topographic barrier to the movement of coastal fog and low clouds when the marine flow is weak. During brisk westerly winds, strong velocity gradients and eddy motions have been observed in the cloud and fog fragments that are often entrained in the flow and pass a short distance above the site.* With the exception of visual observations of this phenomenon by the report consultant, no other data is known to exist that would quantify the nature and extent of the air turbulence situation at the Medical Center.

AIR QUALITY

The project area experiences good air quality relative to the rest of the Bay Area because of the almost continuous flow of relatively clean marine air through the Golden Gate and adjacent San Francisco lowlands. The nearest air pollution monitoring station is maintained by the Bay Area Air Pollution Control District 1.3 miles northeast of the Medical Center. Data from 1973 through 1974 indicate that the pollutants which exceeded state or national standards in San Francisco were oxidants, carbon monoxide, and suspended particulates (see Table III-2, Page 44). Data for San Jose, which experiences generally poor air quality relative to San Francisco has been included for comparison.

The region in the vicinity of the Medical Center consists mostly of residential and some commercial developments. Sources of auto related pollutants such as carbon monoxide and particulates are discussed in the following Transportation Section. Since the traffic volume in the vicinity of the project site is not as heavy as the traffic surrounding the BAAPCD monitoring station (located

*Visual observations made from the ground by Mr. Jon Merkle, staff meteorologist, Environmental Science Associates.



Source: URS Research Company, 1975.
(From draft Crocker Hills EIR,
based on U.S. Weather Bureau data)

FIGURE III-1 HOURLY MEAN WIND SPEEDS DOWNTOWN SAN FRANCISCO

TABLE III-2

AIR POLLUTANT SUMMARY: 1973 and 1974 TOTALS

	Oxidant Maximum	Number of Days National Oxidant Standard (0.08 ppm) Exceeded	Carbon Monoxide Maximum	Number of Days National Carbon Monoxide Standard (9 ppm) Exceeded	Nitrogen Dioxide Maximum	Number of Days State Nitrogen Dioxide Standard (0.25 ppm) Exceeded	Sulfur Dioxide Maximum	Percent of Observed Days State Sulfur Dioxide Standard Exceeded	Particulates Annual Geometric Mean*	Percent of Observed Days State Particulate Standard (100 µg/m³) Exceeded**
San Francisco	0.14	6	9.9	4	0.21	0	.07	0	53	7.4
San Jose	0.28	142	18.0	47	0.30	4	.016	0	60	11.3

Note: For oxidant, "maximum" is the highest hourly average value expressed in parts per million.
For carbon monoxide, "maximum" is the highest eight-hour average value in parts per million.
(The one-hour standard for CO--35 parts per million--was not exceeded during the year.)
For nitrogen dioxide, "maximum" is the highest one-hour average value in parts per million.
For sulfur dioxide, "maximum" is the highest 24-hour average value expressed in parts per million.
The state 24-hour standard for sulfur dioxide varied during the period from 0.04 ppm to 0.10 ppm.

*The annual geometric mean is the nth root of the product of n samples collected during a calendar year.
**µg/m³ denotes a concentration of a millionth of a gram per cubic meter.

Sources: BAAPCD, 1974 and 1975, *Air Currents*.

at Ellis Street and Van Ness Avenue) it is expected that the carbon monoxide level at the site is lower than the BAAPCD levels shown in Table III-2, Page 44 .*

E. Transportation

TRAFFIC AND CIRCULATION

The Medical Center is located five blocks north of the intersection of Market and Castro Streets, and four blocks south of the intersection of Divisadero and Oak Streets (see Figure II-1, Page 5). Castro Street, which bounds the site on the west, is a major thoroughfare** and is designated as such between Market and Waller Streets in the Thoroughfares Plan of the Transportation Element of the Comprehensive Plan. In response to neighborhood requests, the City has restricted the traffic width to one lane in each direction between Duboce Avenue and Market Street. This major thoroughfare designation continues northward on Divisadero Street to California Street. In addition, Castro Street from 24th Street to Waller Street is designated as a transit preferential street in the Transportation Element of the Comprehensive Plan. The other streets bounding the site are designated as local access streets. Duboce Avenue is of some traffic importance, however, as it would provide access from the Mission Street off-ramp of the Central Freeway across Market Street to Castro Street when the Market Street subway construction is completed in 1979 or 1980.*** Fourteenth Street provides two eastbound lanes across Market Street. It also serves as an eastward extension of Roosevelt Way, a collector street serving Buena Vista and Twin Peaks. None of the streets near the project site are designated as bicycle routes in the Transportation Element.

The two intersections with the highest traffic counts and turning movements near the Medical Center are the intersections of Castro Street and 14th Street and Castro Street and Duboce Avenue. Intersection plans for these signalized crossings are presented in Figure III-2, Page 44. The intersections formed by Noe Street at 14th Street and Duboce Avenue are controlled by stop signs.

*For example, approximately 20,000 vehicles per day pass the Medical Center on Castro Street while 62,000 vehicles per day pass the monitoring station on Van Ness Avenue (San Francisco Department of Public Works data).

**A major thoroughfare is a cross-town street whose primary function is to link districts within the City and to distribute traffic to and from the freeways; these are generally routes of citywide significance.

***The Duboce Triangle Association and the Mayor's Advisory Committee for Upper Market Street is considering proposing to the Board of Supervisors that westbound traffic on Duboce not be restored.

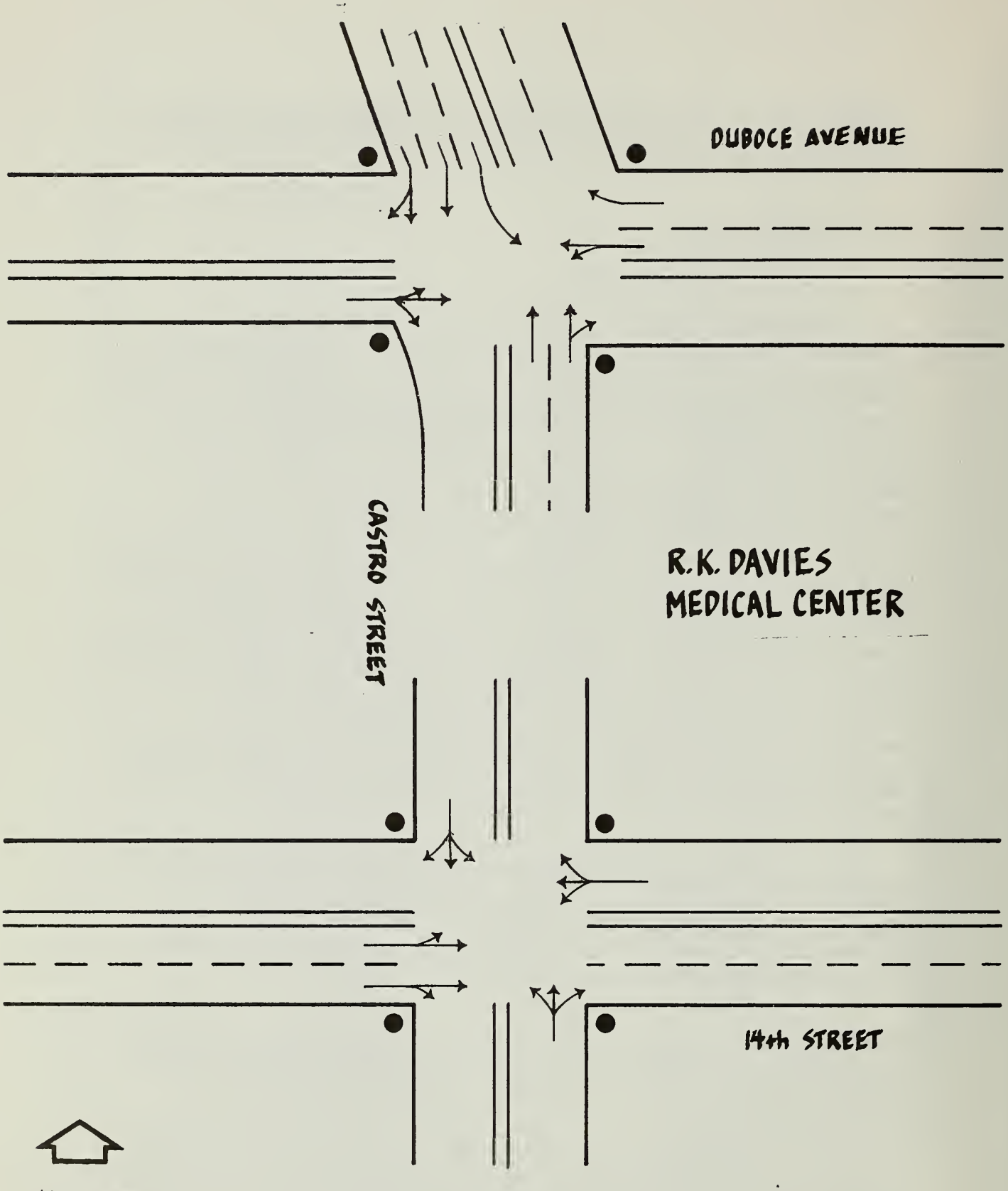


FIGURE III-2 SIGNALIZED INTERSECTIONS NEAR R.K. DAVIES MEDICAL CENTER

Table III-3, Page 48, contains weekday traffic counts for some of the streets nearest the Medical Center. Traffic counts for the intersections near the Center are not available from the San Francisco Department of Public Works. The 7 A.M. to 9 A.M., 3 P.M. to 4 P.M., and the 7 P.M. to 8 P.M. periods were chosen to illustrate the existing traffic burden carried by surrounding streets during the Center's peak shift-change and visitor hours. The existing peak-hour traffic congestion at the signalized intersections of Castro Street and 14th Street and Castro Street and Duboce Avenue was examined with the aid of the *Highway Capacity Manual* (Highway Research Board, 1966). This method indicates that traffic on Castro Street near the Center is currently experiencing level of service C conditions.* This estimate of existing traffic conditions was verified by observing three recent peak-hour periods: Saturday, August 7, 1976, from 2:10 P.M. to 3:15 P.M.; Monday, August 9, 1976, from 8:00 A.M. to 9:00 A.M.; and Thursday, August 12, 1976, from 4:10 P.M. to 5:15 P.M. During all of these periods traffic flowed freely on 14th Street and on Duboce Avenue with either short or non-existent queues during the red phases. None of the green phases was observed to be loaded,** thereby indicating level of service A or B for 14th Street and Duboce Avenue. Traffic on Castro Street is more congested, although the frequency of loaded green phases indicates level of service C conditions in both directions at 14th Street. The heaviest congestion on Castro Street occurs northbound at Duboce Avenue where drivers are stopped by signals that favor movement on Duboce Avenue and where the level of service drops to D during the heavier peak-hour periods. In the opinion of the Environmental Science Associates traffic analyst, the chronic congestion at this point is caused more by inappropriate signal timing than by excessive traffic loading on Castro Street.

PUBLIC TRANSIT

The "N" streetcar line stops at the Sunset Tunnel portal opposite the Center on Duboce Avenue. This is one of five of the Muni Metro rail routes which will operate in the upper level of the Market Street subway when it is opened for service in 1977. The "N" line provides connections to the Bay Area Rapid Transit District (BART) and Golden Gate Transit District lines at the Civic Center Station as

*Level of service C indicates stable traffic flow of sufficient volume to restrict the maneuverability of individual drivers; this condition is considered by the Institute of Traffic Engineers (1976) as suitable for urban design practice. Levels of service A through F are defined in Appendix F, Page 150.

**A green phase is loaded when vehicles are ready to enter the intersection when the signal turns green and when they continue to be available to enter during the entire phase with no exceedingly long gaps caused by lack of traffic.

TABLE III-3

WEEKDAY TRAFFIC COUNTS (1970-1976)

LOCATION	DATE OF COUNT	24 HOUR	7 AM-9 AM	3 PM-4 PM	7 PM-8 PM
Castro Street (North of Duboce Avenue)	6/27/72	19,600	1,900	1,400	1,100
Castro Street (North of 14th Street)	4/26/73	19,700	2,230	1,400	1,100
Duboce Avenue (At Steiner Street)	8/2/70	12,700	*	*	*
Noe Street (South of Market)	4/26/73	3,400	*	*	*
14th Street (Between Sanchez and Church Streets)	3/76	6,700	800	500	300

*Not available.

SOURCE: San Francisco Department of Public Works

well as service to the Sunset District and the Downtown area. The crosstown Divisadero-Castro No. "24" busline stops in front of the Center on Castro Street. This route connects with most of the major radial transit routes serving the Richmond, Western Addition, Marina, Pacific Heights and West of Twin Peaks Districts, with crosstown routes serving the Mission District, and directly serves Eureka Valley and Noe Valley. The No. "22" busline which runs on Church Street two blocks east of the site connects with all major bus routes serving the Mission and Bayview-Hunters Point area. The No. "43" busline, which serves the Buena Vista, Twin Peaks, and Haight-Ashbury areas, passes the site on 14th Street. The Haight Street buslines which serve the Sunset District are two blocks north of the Center (see Figure III-3, Page 50).

As shown in Table III-4, Page 51, six of the eight transit routes serving the Medical Center have a peak-hour load which exceeds the scheduled capacity, based upon the number of seats. A survey conducted by the Center in mid-week in March, 1974, indicated that approximately 500 persons per day arrived at the Center via Muni: 260 staff members, 70 patients, and 170 patient visitors.

The existing trip generation (one-way) which may be attributed to the Medical Center facilities is best provided by a weekday survey of all staff, users and visitors conducted on March 20, 1974. The survey provides a breakdown of person trips by transportation mode and purpose with an hourly tabulation of arrival by mode. The complete results of this survey is given in Appendix I, Page 157.

PARKING

There are two principal points of vehicular ingress to and egress from the Medical Center site. One is on Castro Street, 250 feet south of Duboce Avenue, and the other is Duboce Avenue, 130 feet east of Castro Street. These provide driveway access to the main entrance of the acute hospital, the medical office building, the ambulance and emergency entrance, and the outpatient entrance at the diagnostic center. On-site parking areas surround the Center buildings on the Castro, 14th and Noe Street sides, providing a total of 287 spaces of which approximately 150 are allocated or used by full-time physicians, visiting physicians, and other Center employees. Public fees are $0.50 per hour up to $2.50 maximum per day. Physicians and employees can elect to pay the public rate or a special rate of $15.00 per month. Visiting physician parking is located in the upper level near Castro Street and adjacent to the Rehabilitation Center, and resident physician and other staff parking is located on the lower levels near Noe Street. Hospital receiving and loading is located at the B level of the acute hospital, two stories below the entrance lobby level, with driveway access to Duboce Avenue 116 feet west of Noe Street. The Noe Street frontage is presently entirely free of driveways, providing an uninterrupted curb

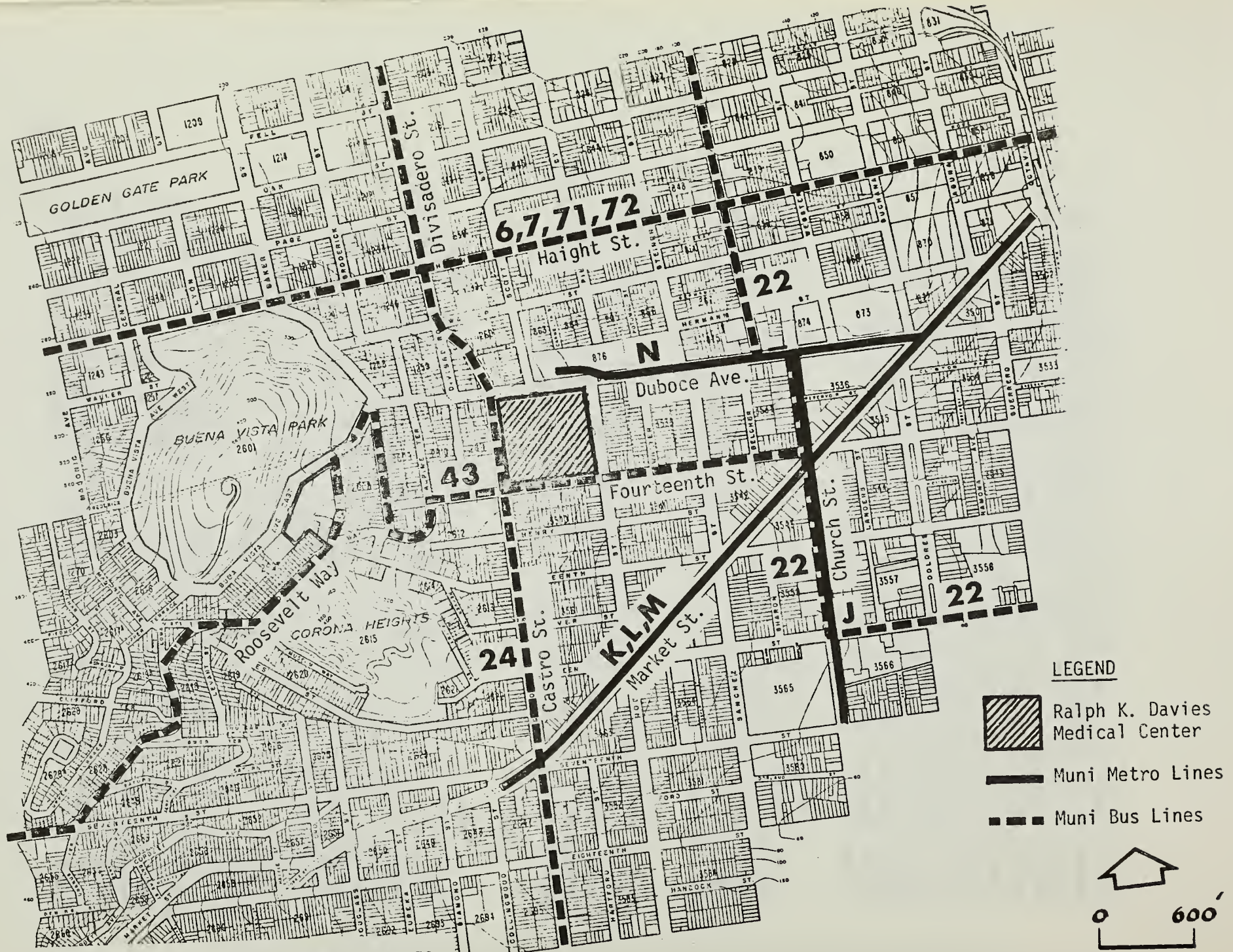


FIGURE III-3 PUBLIC TRANSIT ROUTES

TABLE III-4

PATRONAGE CAPACITY PROFILES FOR MUNI LINES SERVING THE RALPH K. DAVIES MEDICAL CENTER

Route	A.M. Peak Hour Load	Per Hour* Capacity	P.M. Peak Hour Load	Per Hour Capacity
N	1605	1138	1537	1138
6	624	484	631	484
7	328	352	440	352
22	666	924	587	748
71	600	384	622	384
72	476	336	648	384
43	222	192	103	144
24	501	384	473	384

*Available seats. All capacity figures are pending recomputation as a result of recent service cutbacks.

SOURCE: James J. Finn, Director of Transportation, San Francisco Public Utilities Commission, August 16, 1976.

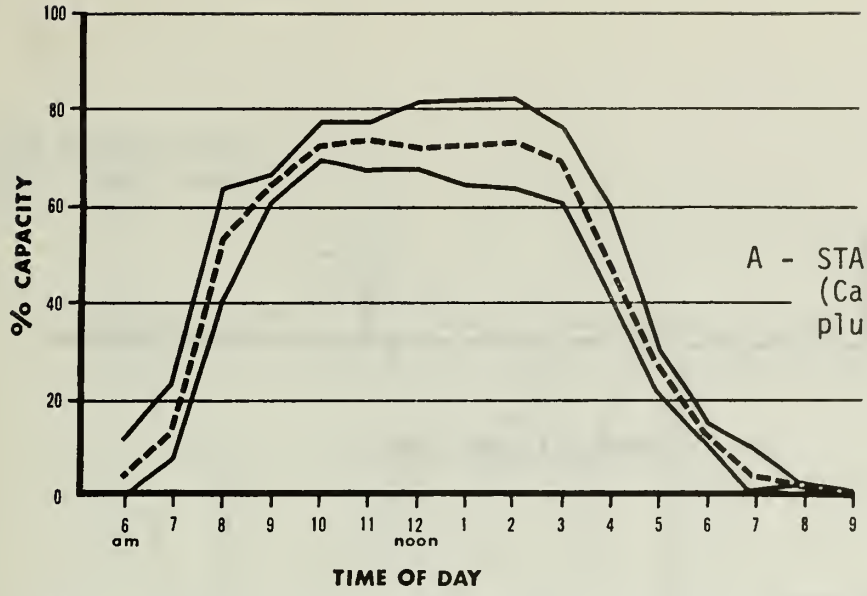
for on-street parking accommodating approximately 23 vehicles* in a parellel parking pattern. Castro Street has one curb cut and two bus loading zones and accommodates approximately 21 parked vehicles except between 7 A.M. and 9 A.M. and 4 P.M. and 6 P.M., when the frontage north of the main driveway entrance to the Center is under tow-away restrictions. Both Duboce Avenue and 14th Street have three driveway cuts. Duboce Avenue accommodates approximately 19 parked vehicles and 14th Street 23 vehicles. On the opposite side of the streets facing the Center, there are 22 parking spaces on Noe Street, 11 on Castro Street, 17 on 14th Street, and 19 on Duboce Avenue. A curb survey of the streets within a 2 to 3 block radius of the Medical Center indicates there are approximately 1,040 curb parking spaces available.*

On four weekdays in October 1975, a survey was conducted to estimate the number of cars in the hospital parking lots and the adjacent streets (Castro, Duboce, 14th, and Noe) between the hours of 6 A.M. and 9 P.M. The results are given in Figure III-4, Page 53. The data represents the average and range of four weekdays (Monday, Wednesday, Thursday, and Friday) from 6 A.M. to 9 P.M. Figure III-4-B, Page 53, shows that the visitors' parking lot tends to peak around 2 P.M. and 3 P.M. in the afternoon. Staff parking is more stable throughout the morning and afternoon between 9 A.M. and 3 P.M.; capacity utilization averages around 70 percent between those hours. Figure III-4-C, Page 53, shows street parking to be heavier (close to 100 percent utilization) throughout most of the day, tapering off slightly after 5 P.M. The figures do not fully reflect the short-term peaks resulting from overlapping shifts. On some occasions, the visitors lot and the staff lot have been observed by Mr. Jack Hauser, Vice President for Administration of the Medical Center, to be totally filled during late afternoon.

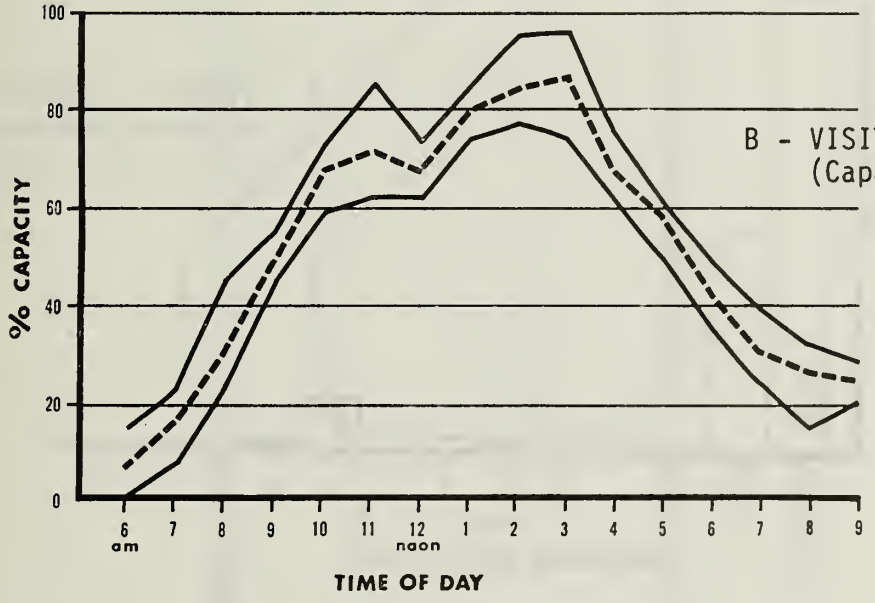
Staff and visitors' parking lots were also analyzed to determine the length of stay of users; the results are given in Figure III-5, Page 54. As expected, cars in staff lots frequently average eight to nine hours while the most frequent stay-times for visitors averaged less than three hours. Doctors showed the most variable lengths of stay. For further discussion of Figure III-5 see Appendix D, Page 147.

Using this information in conjunction with the earlier survey of March, 1974 (Appendix I, Page 157), an estimate was made of total parking demand generated by the Medical Center at various times of the day.

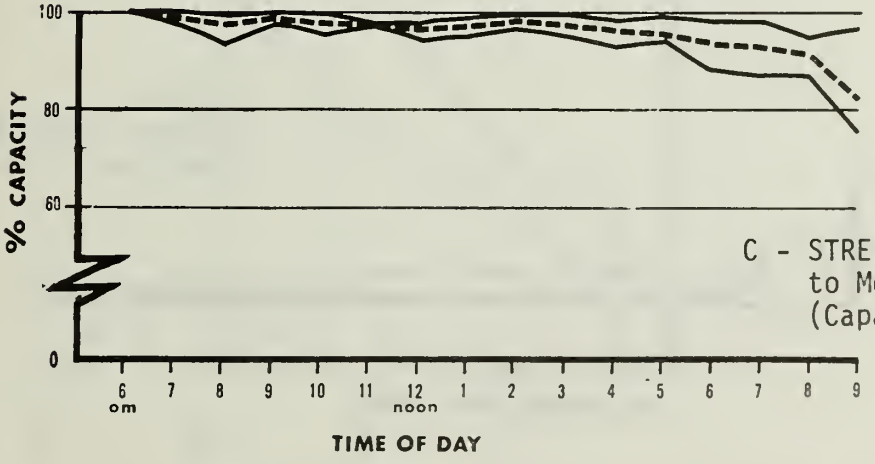
*Since the spaces are unmarked the curb capacity varies with the size of the car.
**The survey included the streets bounded by Fifteenth Street, Sanchez-Steiner Streets, Waller Street, and Alpine Terrace.



A - STAFF PARKING LOTS
(Capacity: 89 spaces
plus 30 reserved spaces)



B - VISITORS PARKING LOT
(Capacity: 168 spaces)



C - STREET PARKING (Adjacent
to Medical Center)
(Capacity: 160 spaces)

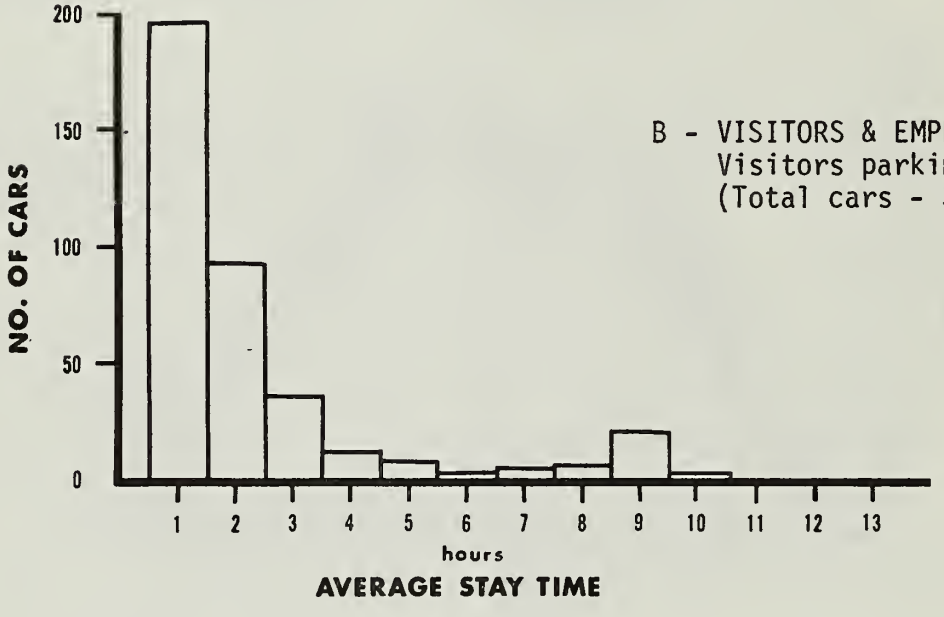
▬▬▬ 4 day average

▬▬▬ 4 day range

FIGURE III-4 PARKING UTILIZATION AT R.K. DAVIES MEDICAL CENTER, OCTOBER 9, 13, 15, AND 17, 1975

A - STAFF PARKING LOTS
(Total cars - 105)

B - VISITORS & EMPLOYEES -
Visitors parking lot
(Total cars - 380)



C - DOCTORS -
Visitors parking lot
(Total cars - 88)

FIGURE III-5 ESTIMATED AVERAGE STAY TIME, OCTOBER, 1975

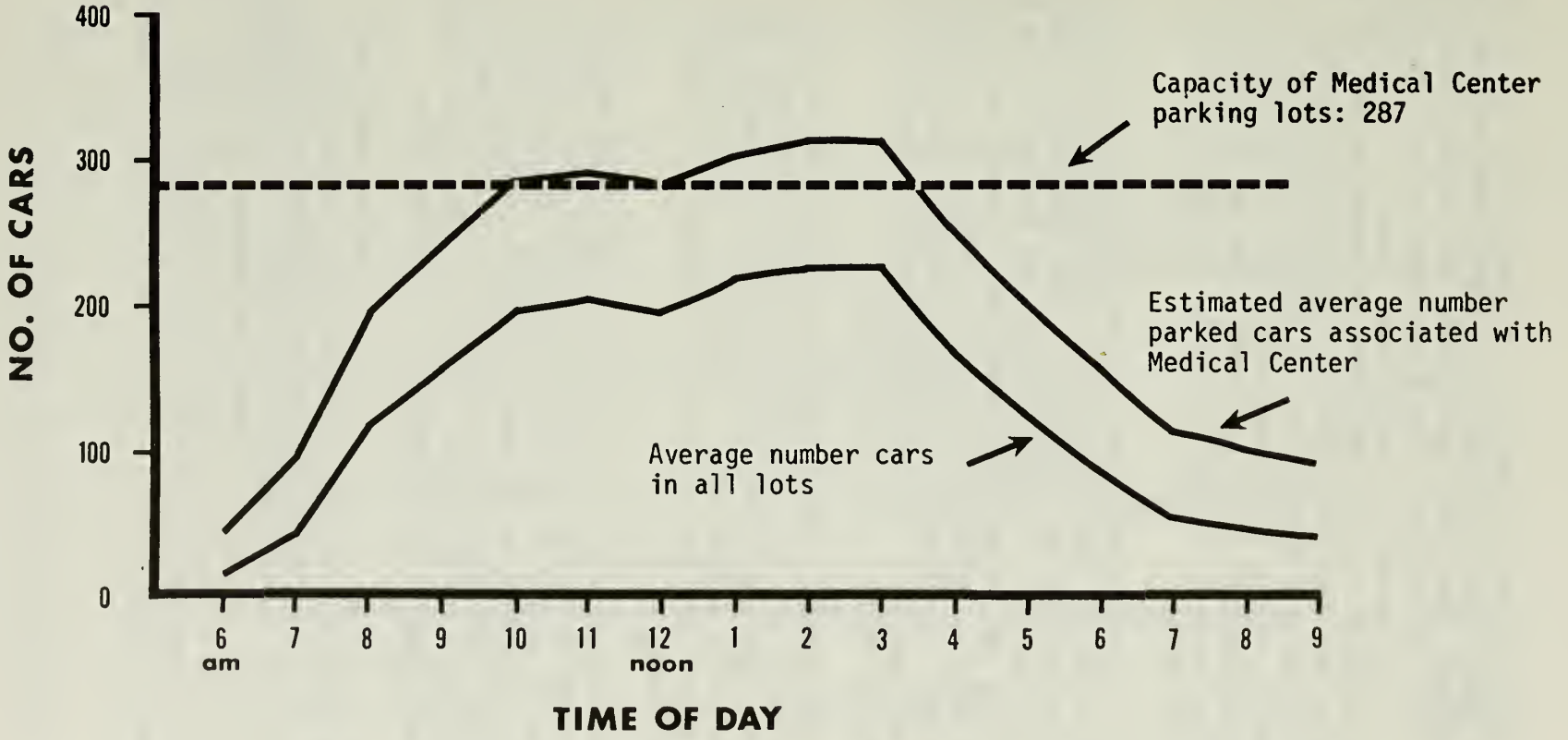


FIGURE III-6 ESTIMATED MEDICAL CENTER GENERATED PARKING

Figure III-6, Page 55, shows the results. The upper curve is an estimate of the average total number of parked cars associated with the hospital on a typical weekday. The lower curve shows the average number of cars parked in the parking lots. The difference is the estimated average number of cars parked on the adjacent streets. The estimated number of street-parked cars was determined by comparing the estimated total number of parked cars associated with the hospital (March, 1974 survey) to the estimated number of cars using the lots (October, 1975 survey). Generally, during peak hours, on-site parking space is insufficient to accommodate all cars. The curves are estimates of the average and either curve actually represents the expected cluster of a range of possibilities.

A personal, door-to-door survey of residents who live on the streets that front on the Medical Center was conducted on October 22, 1975*. The survey purpose was to determine the residential demand for on-street parking spaces in the neighborhood and the opinion of the residents regarding the issue. The interviewer visited the neighborhood during the daytime and evening hours of October 22 to obtain as high a response rate as possible. Out of a possible 144 households in the survey area responses were obtained from 107. Results of the survey are given in Table III-5, Page 59.

Of the interviewed residents who have cars and off-street parking available, 57 percent said that parking was difficult on the street. Some also complained that often their driveways or garages are blocked by parked cars. Of those car owners without garages or off-street parking, 96 percent indicated difficulty in parking on the street.

Forty-two percent of the residents with cars said parking was difficult every day of the week and 47 percent felt that it was difficult at all hours of the day and night. Thirty-nine percent specified weekdays as the most difficult times to find parking while four percent specified weekends. Thirty percent said that parking availability was lowest in late afternoon and evening; four percent complained about the morning and midday hours.

In order to further clarify the street parking conditions, another parking space survey was conducted during January and February 1976. This survey included an hourly count of parking spaces from 6:00 A.M. to midnight during weekdays for streets adjacent to the Medical Center and several blocks southward. The objective of the survey was to evaluate any significant change in parking space availability as a function of distance from the Medical Center. The results are shown in Figure III-7, Pages 57 and 58, where the percent

*See Appendix E (Page 149) for survey questions.

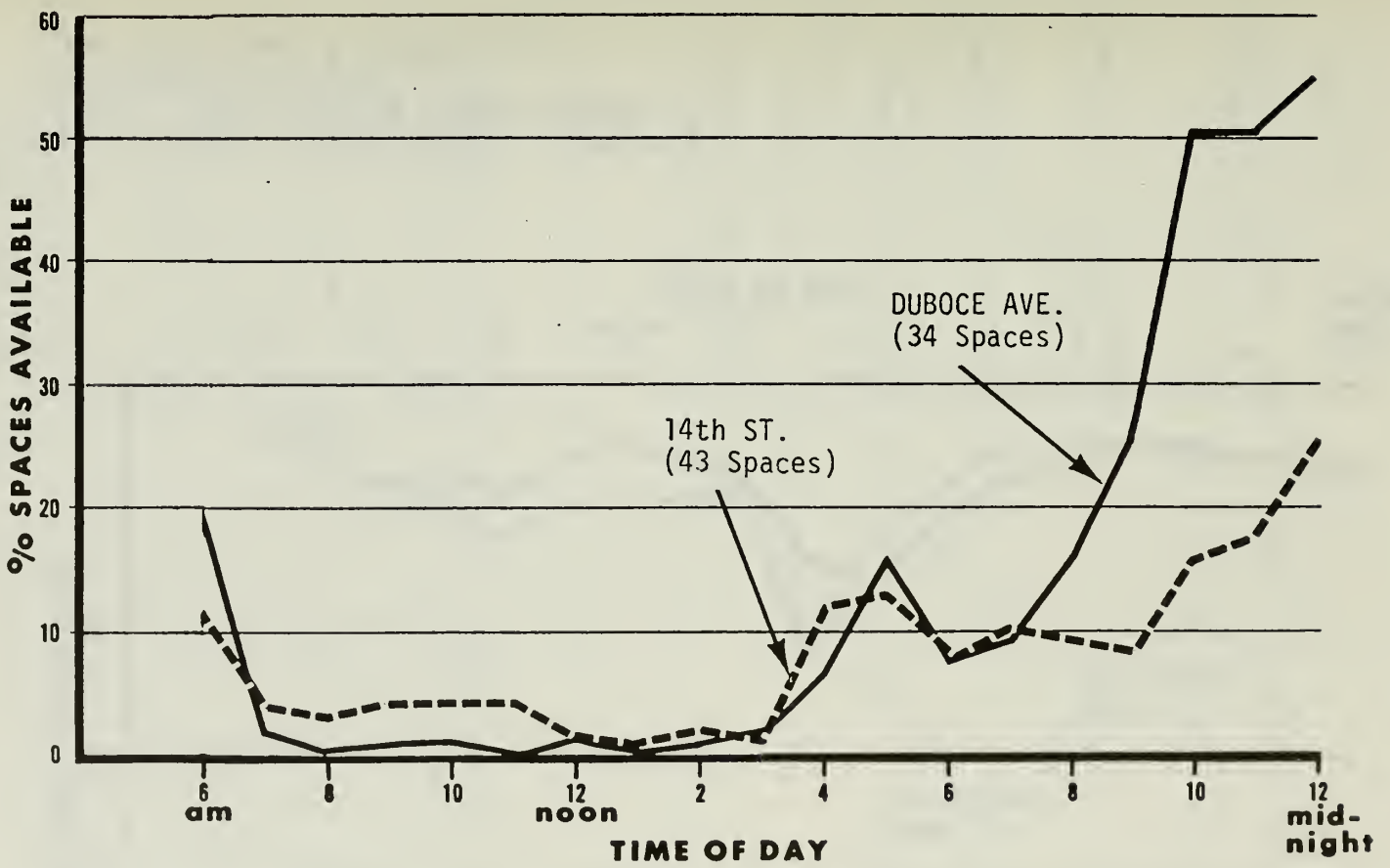


FIGURE III-7A WEEKDAY STREET PARKING SURVEY, VICINITY OF RALPH K. DAVIES MEDICAL CENTER BETWEEN CASTRO AND NOE STREETS
(Jan. 21,27; Feb. 2,12,20, 1976)

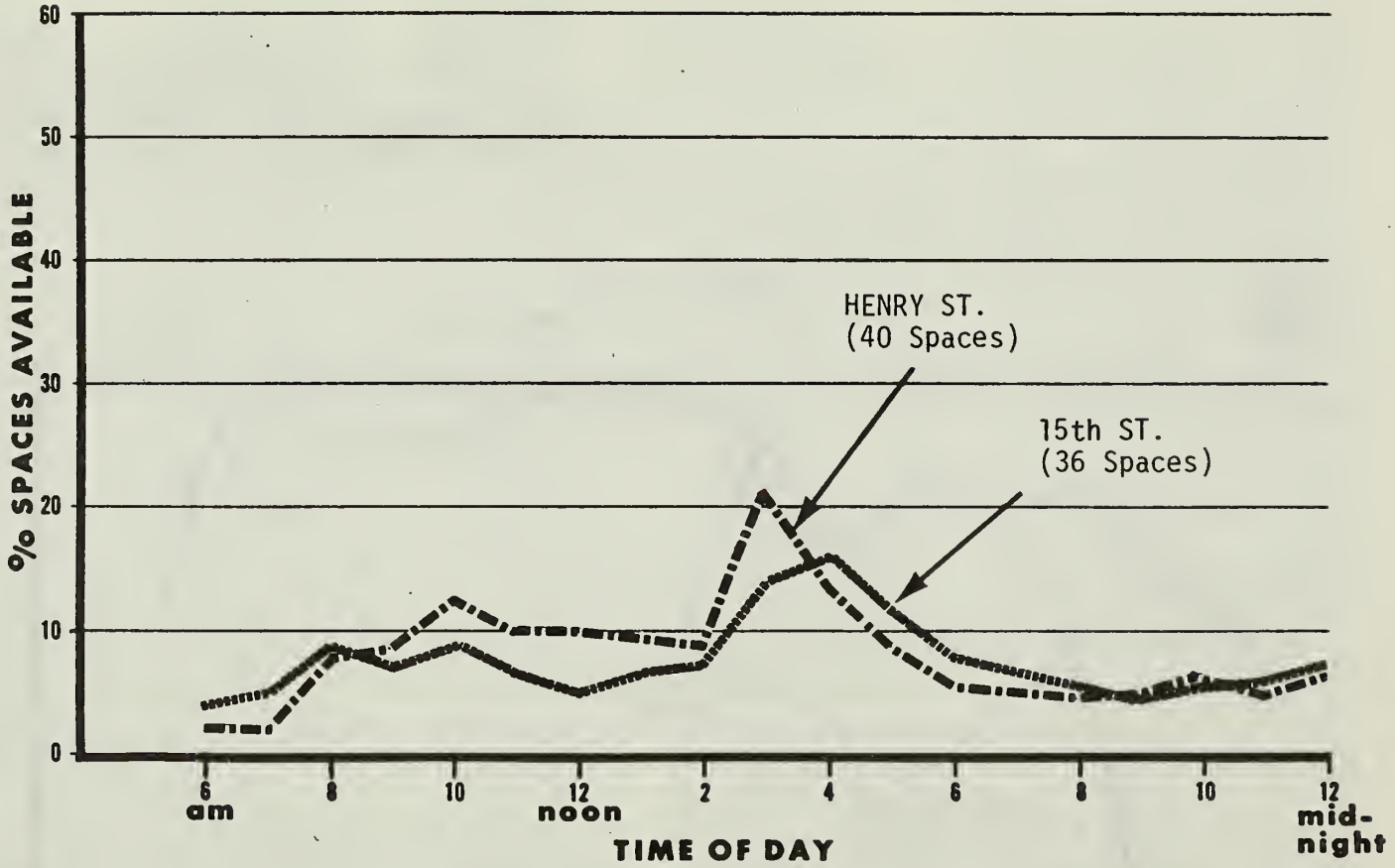


FIGURE III-7B WEEKDAY STREET PARKING SURVEY, VICINITY OF RALPH K. DAVIES MEDICAL CENTER BETWEEN CASTRO AND NOE STREETS
(Jan. 21,27; Feb. 2,12,20, 1976)

TABLE III-5

RESULTS OF RESIDENT INTERVIEW SURVEY FOR PARKING DEMAND
October 22, 1975

Dwelling units with cars:		74%
with one car:	(65.5%)	
with two cars:	(8.5%)	
Dwelling units without a car:		26%
Estimated total number of cars (based on 144 dwelling units):		118
Estimated total number of cars having available off-street parking:	(62)	
Estimated total number of cars needing on-street parking:	(56)	

of available spaces on four streets between Castro and Noe Streets have been plotted as a function of time. Shown on Figure III-7-A, Page 57, are the results for Duboce Avenue and 14th Street, the north and south boundaries of the Medical Center. Both plots show between 0 and five percent available space from 7:00 A.M. to 3:00 P.M. with gradually increasing space becoming available in the late afternoon and evening hours until midnight. Figure III-7-B, Page 58, shows the results for the next two streets south of the Center, Henry and 15th. For these streets, parking vacancy ranges from 5 to 13 percent between 8:00 A.M. and 2:00 P.M., rises between 3:00 P.M. and 5:00 P.M. and then diminishes to between 4 and 8 percent during the evening and night hours. In summary these results show that:

1) During the morning and early afternoon hours, the parking on streets immediately adjacent to the Medical Center is fully used while one or two blocks away limited spaces are always available; and,

2) From 4:00 P.M. on through the evening and night hours, parking spaces are increasingly available on streets adjacent to the Medical Center while spaces become increasingly scarce for streets away from the Medical Center. The Medical Center provides street parking capacity during evening and night hours for adjacent residential areas.

F. Noise

Vehicles such as cars, trucks, and buses have been identified as the major sources of noise in San Francisco. Bolt, Beranek and Newman, 1974, monitored noise levels throughout the City and developed street noise maps for the year 1974 with projections for 1995 in terms of the day-night equivalent noise level, L_{dn}.* The street noise levels given by this report for streets surrounding the Medical Center are shown in Table III-6.

TABLE III-6

STREET NOISE LEVELS IN THE VICINITY OF RALPH K. DAVIES MEDICAL CENTER

Street	1974 L_{dn} (dBA)**	1995 L_{dn} (dBA)
Castro	75	70
Duboce	70	65
Noe	< 65	< 65
14th	< 65	< 65

Off-street background or ambient noise levels are presented in the report for various areas of the City. Duboce Avenue is a boundary between two of these ambient noise areas. For 1974, the area north of Duboce has a background L_{dn} of 65 dBA while the area south of Duboce (including the Medical Center) has a background L_{dn} of 60 dBA. Projections for 1995 indicate a 5 dBA reduction

*L_{dn} represents the energy average of the noise level over a 24-hour period with a weighting factor of ten decibels added to the nighttime noise levels to allow for the greater intrusion of night noise.
**dBA is the sound pressure or noise intensity in decibels measured with an "A" scale compensation which represents the way in which people perceive sound.

for both of the above background values due to the new State regulations going into effect in 1988, which will act to reduce emitted noise levels from vehicles.

In addition to the generalized street and background noise levels given above, on-site background measurements at the Medical Center have been made in connection with an acoustic study for a rooftop helistop (Buonaccorsi and Associates, 1973). The measurements were taken just outside the windows at the fourth floor level of the acute hospital facing east toward Noe Street. Results are shown in Table III-7, Page 62, in terms of L_{90}, L_{50} and L_{10} noise levels. This noise level designation is a statistical description which indicates the sound level (dBA) exceeded 90 percent, 50 percent, and 10 percent of the time, respectively, during the measurement period.

G. Land Use

The neighborhood of the Ralph K. Davies Medical Center is a predominantly residential area devoted to low and medium density residential uses. Although no official neighborhood plan has been developed for the area, it has been the subject of considerable planning analysis by the Department of City Planning and urban design consultants in recent years. Two building conservation areas have been designated, one in the Market-Duboce Triangle east of Castro Street, and one in Buena Vista Heights west of Castro Street, and federally assisted code enforcement programs have been carried out in each. In the Market-Duboce Triangle, federal assistance has resulted in modifications in street and sidewalk design, the construction of benches and other street furniture, and the planting of street trees on all of the streets. The treatment proposed by the Medical Center on the west side of Noe Street along the Medical Center frontage would be similar to the changes effected on other blocks in the Triangle area. The Medical Center has planted street trees on its 14th Street and Duboce Avenue frontages, and the City has planted trees on Castro Street.

The height and bulk ordinance adopted in 1972 recognizes the existence of the Center and its Master Plan by providing for a 65 foot height limit for most of the site and a 130 foot limit for the acute hospital (see Figure III-8, Page 63). The revised institutional Master Plan for the Ralph K. Davies Medical Center (August, 1975) contains no revisions exceeding these provisions of the Planning Code.

As many of the residential buildings in the area have no off-street parking spaces (see Figure III-9, Page 64), residential parking is deficient in the immediate vicinity of the Medical Center and many neighbors of the Medical Center are dependent upon on-street parking spaces, including those surrounding the Center.

TABLE III-7

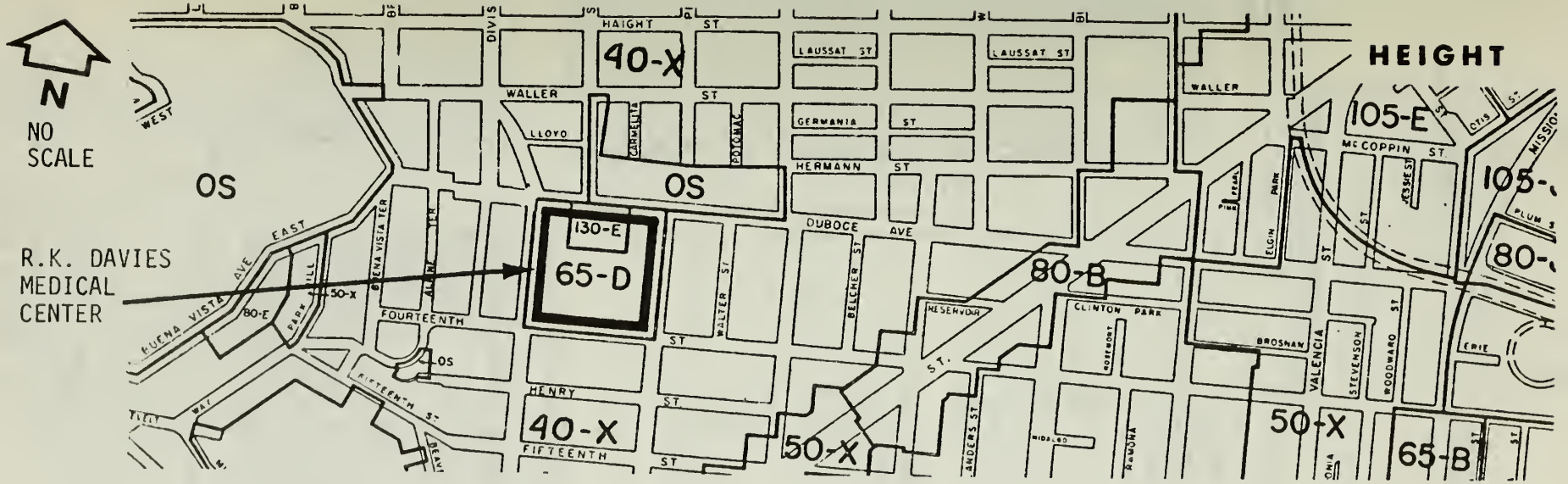
BACKGROUND NOISE LEVELS AT THE RALPH K. DAVIES MEDICAL CENTER

Date and Time	(dBA) L_{90}	L_{50}	L_{10}
23 October 1973			
1335 - 1410	54	61	63
1535 - 1635	55	62	66
2140 - 2240	52	55	58
2330 - 0030	50	52	56
24 October 1973			
0105 - 0205	52	54	59
0500 - 0600	51	52	56
0630 - 0730	55	57	68*
0800 - 0900	57	60	66
0905 - 1005	56	58	63

Source: Buonaccorsi and Associates, (1973)

*Refilling of oxygen storage tank in east parking lot.

Notes:
1. Acoustical Conditions:
   Traffic on Duboce and Noe Streets, Distant Traffic, Hospital Mechanical Equipment on Roof and in East Parking Lot, Streetcars, Occasional Aircraft Flyover, Winds 5 mph or less.
2. Noise Measurements made with a B & K 166/5.45 Environmental Noise Classifier.



63

Height District	Height Above Which Maxiumum Dimensions Apply	Maximum Building Length	Maximum Diagonal Dimension
OS	(Governed by Section 290 of the Planning Code)		
40X	(This table not applicable)		
50X	(This table not applicable)		
65B	50	110	125
65D	40	110	140
80B	50	110	125
80E	65	110	140
105E	65	110	140
130E	65	110	140

FIGURE III-8 HEIGHT DISTRICTS, VICINITY OF RALPH K. DAVIES MEDICAL CENTER

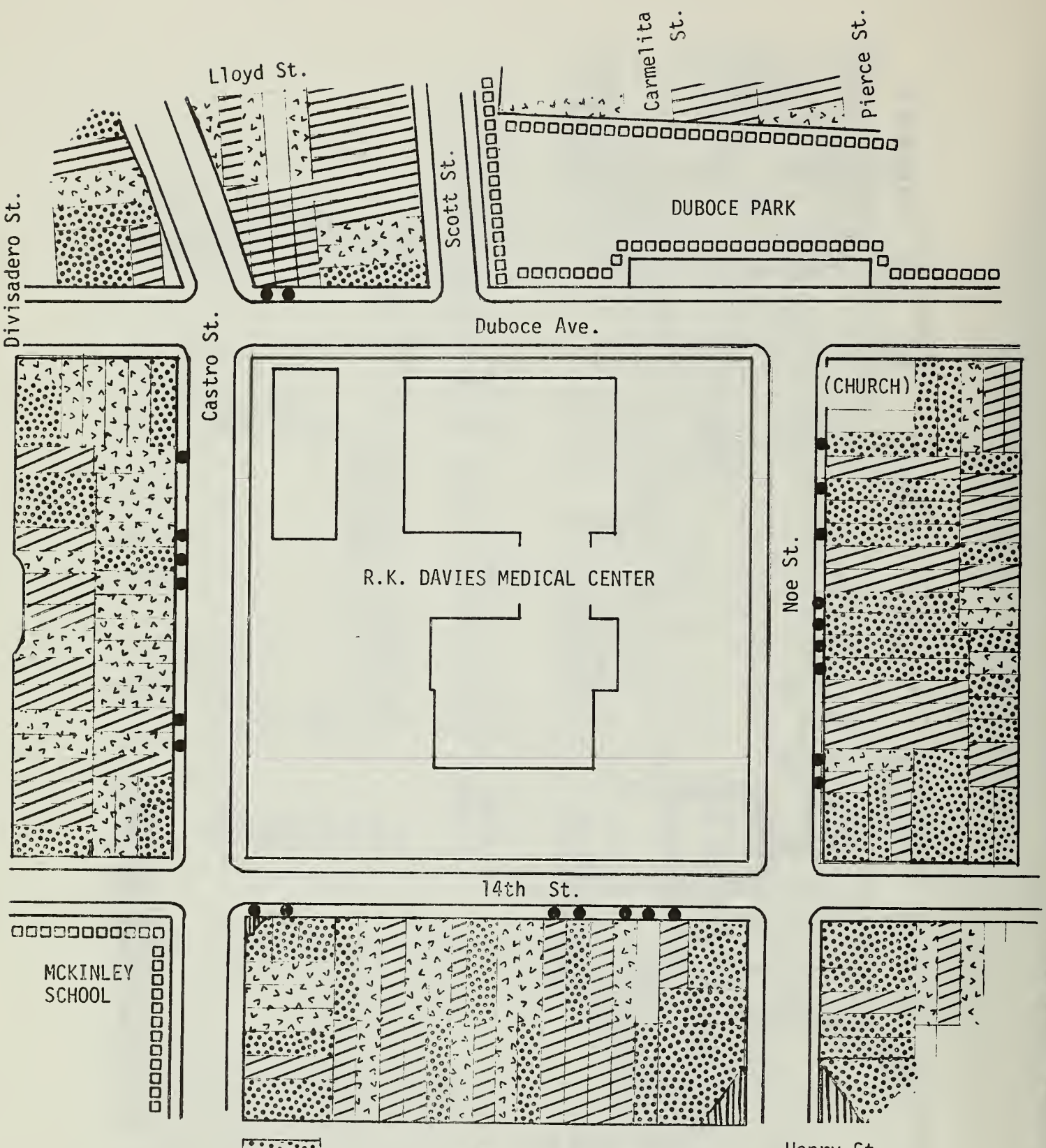


FIGURE III-9

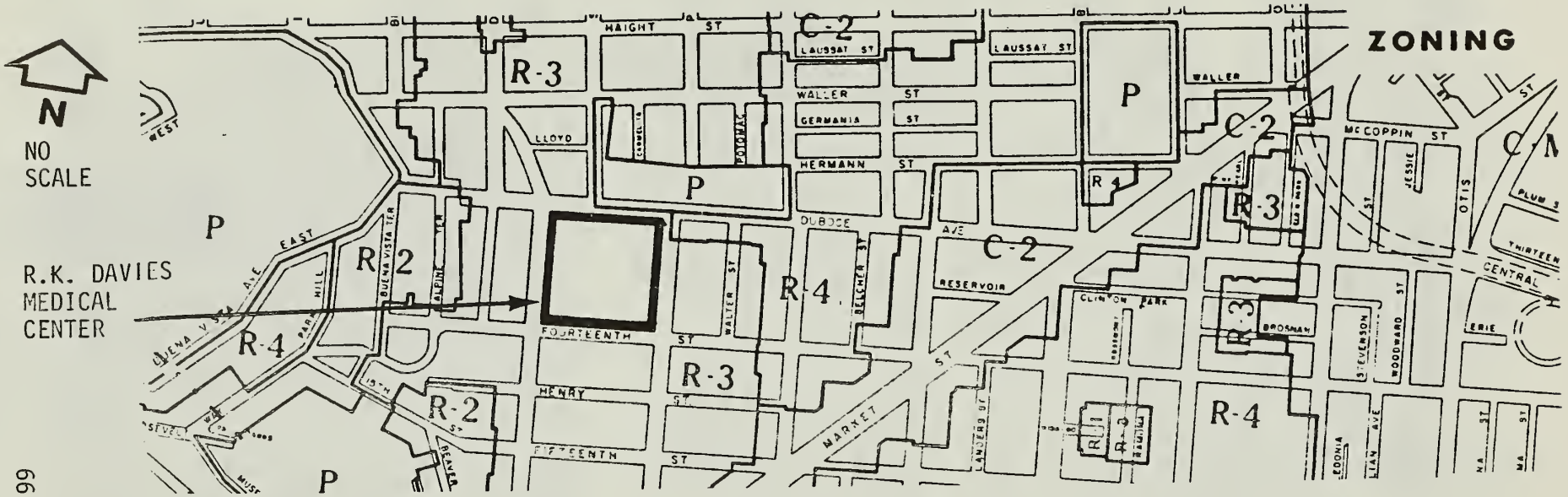
EXISTING LAND USE, VICINITY OF R.K. DAVIES MEDICAL CENTER

The Urban Design element of the Comprehensive Plan describes the Buena Vista area as "outstanding and unique" in its "quality of visual form and character". It states that the area has "an unusually fortunate relationship of building scale, landscaping, topography, and other attributes that makes them indispensable to San Francisco's image".

Buena Vista has a significant number of major institutions within its boundaries. On the east side of Buena Vista Park, which rises to an elevation of 550 feet, there are two such institutions: 1) St. Joseph's Hospital (which visually dominates the area) at the 400 foot elevation four blocks west of the Ralph K. Davies Medical Center, and 2) the Center itself at a 220-foot elevation. The development plan proposes two additional buildings on the Medical Center site which are architecturally similar to those approved in 1965. The principal difference is that the buildings now proposed would have lesser bulk, in compliance with the requirements of the height and bulk provisions of the Planning Code adopted in 1972.

Most of the area is in an R-3, Low-Medium Density Multiple Residential District, including the Ralph K. Davies Medical Center. Alpine Terrace and Buena Vista Terrace, between 14th Street and Duboce Avenue, and the east side of Park Hill Avenue are in an R-2, Two-Family Residential District. A pocket of parcels at the eastern foot of the Corona Heights recreation area is also in an R-2 district. St. Joseph's Hospital and the remainder of Buena Vista Avenue East between St. Joseph's and Upper Terrace are in an R-4 High Density Multiple Residential District as are Sanchez Street, Steiner Street, and Duboce Avenue east of the Medical Center. The Market and Church Street edges of the area are in a C-2 Community Business District (see Figure III-10, Page 66).

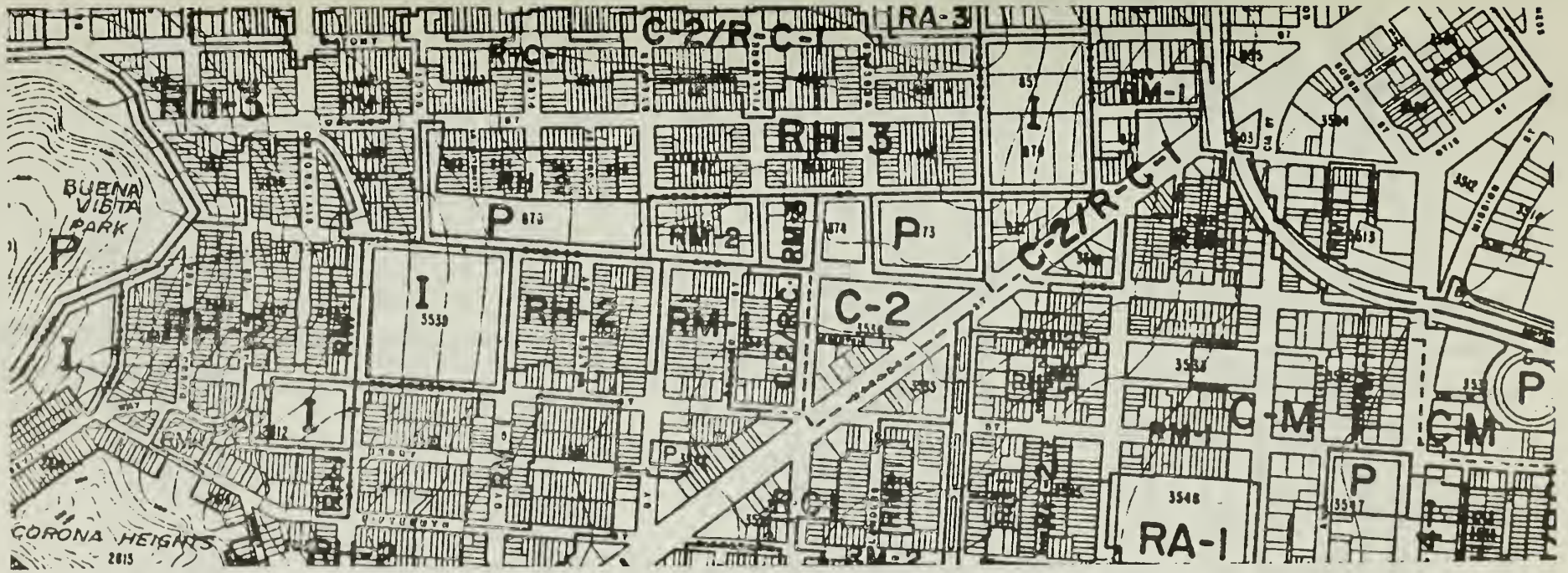
On May 20, 1976, by Resolution No. 7499, the City Planning Commission declared its intention of adopting new residential district classifications and controls and placed them in effect on an interim basis until permanent new zoning maps and controls are enacted by the Board of Supervisors. The Ralph K. Davies Medical Center block would be placed in an I, Institutional District, and would be subject to the Conditional Use procedures of the Planning Code. The Institutional District would permit medical centers, including medical office buildings, as conditional uses. Until such time as the initiated zoning has been decided upon, any new building activity must conform to both the existing and proposed district standards or to the most restrictive of either. Under the present R-3 zoning, the applicable decision of Judge Ira Brown in November 1974 in the case of Stanyan/Fulton Streets Association v. San Francisco City Planning Commission and St. Mary's Hospital that medical office buildings are first permitted in R-4 zoning districts would require a reclassification of that portion of the site before a conditional office use could be authorized. The proposed zoning classifications in the vicinity of the Medical Center are shown on Figure III-11, Page 67.



Zoning Districts

P	Public Use District
R-1	One-Family Residential District
R-2	Two-Family Residential District
R-3	Low-Medium Density Multiple Residential District
R-4	High Density Multiple Residential District
C-2	Community Business District

FIGURE III-10 ZONING DISTRICTS, VICINITY OF RALPH K. DAVIES MEDICAL CENTER



0 800'

House Character Districts

RH-1 1 Dwelling Unit per Lot
RH-2 2 Dwelling Units per Lot
RH-3 3 Dwelling Units per Lot

Mixed Character Districts

RM-1 1 Dwelling Unit per 800 Square Feet of Lot Area
RM-2 1 Dwelling Unit per 600 Square Feet of Lot Area
RM-3 1 Dwelling Unit per 400 Square Feet of Lot Area

Residential-Commercial Combined Districts

R-C-1 1 Dwelling Unit per 800 Square Feet of Lot Area
P Public Use
I Institutional District
C-2 Community Business

FIGURE III-11 PROPOSED ZONING DISTRICTS, VICINITY OF RALPH K. DAVIES MEDICAL CENTER

An amendment to the Planning Code that was adopted in 1976 by the Board of Supervisors, added Section 304.5 which formalized the procedures for filing institutional master plans with the Department of City Planning. Such a plan is required from each educational and medical institution in the City by December 31, 1976. Thereafter, at intervals of two years, a status report must be filed describing the current status of the plan. When a full institutional master plan, or revisions to such a plan, is filed, the City Planning Commission shall hold a public hearing on the plan for the receipt of public testimony. Such a plan was filed by the Ralph K. Davies Medical Center on August 12, 1975 and a public hearing was conducted by the City Planning Commission on October 2, 1975.

H. Community Characteristics

The Medical Center is located within the Buena Vista Planning Area, and is immediately surrounded by three Census Tracts, 167, 169, and 170, as shown on Figure III-12, Page 69. Based on data from the U.S. Department of Commerce (1974), neither the Planning Area nor the three surrounding census tracts are much different from the rest of San Francisco with respect to numerical population change (1960 to 1970), percent of population under 18 years, percent of family households, percent of families with children and the percent of households who have resided at the same address for the years 1965 to 1970. The only clear exception to this uniform pattern was the lower population of age 65 or over indicated by the census data (6.1 percent vs. 13.9 percent for the entire City) for the census tracts surrounding the Medical Center.

The six census tracts within the Buena Vista Planning Area are diverse in terms of income levels, household composition, and ethnic background (San Francisco Department of City Planning, 1975). The black population, for example, ranges from two percent to 59 percent for the census tracts within the Planning Area. According to the 1970 census there is variation in education levels: the proportion of college attendance ranges from 11 to 32 percent. Table III-8, Page 70, highlights some of the differences among the six census tracts that encompass the site. R. K. Davies Medical Center is located within Census Tract 169.

I. Visual and Aesthetic

The Ralph K. Davies Medical Center occupies a 7.2 acre square city block, sloping uphill from Noe Street to Castro Street between Duboce Avenue and 14th Street. The structural facilities at the Center are all less than ten years old, and were built in accordance with a plan approved by the City Planning Commission in 1965.

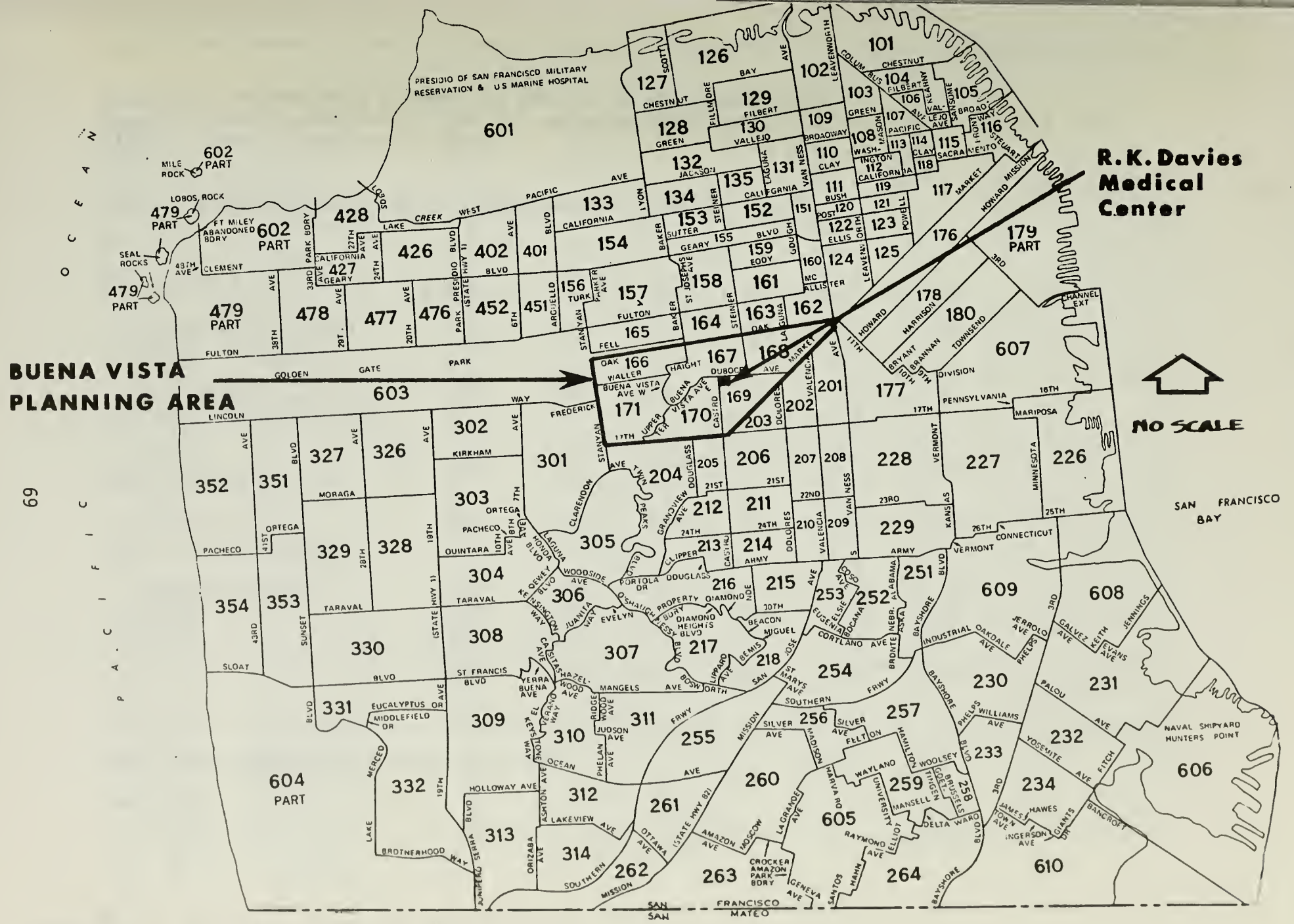


FIGURE III-12 1970 CENSUS TRACTS OF THE BUENA VISTA PLANNING AREA AND SAN FRANCISCO

TABLE III-8

BUENA VISTA PLANNING AREA CENSUS TRACTS DATA

	166	167*	168	169*	170*	171	(167,169, 170)
Population (1970)	6,251	5,576	6,866	3,846	3,527	8,721	12,949
Black	41%	59%	50%	12%	2%	24%	30%
Spanish-Speaking	7%	4%	8%	15%	4%	6%	7%
Families with children under 18 years	49%	48%	44%	46%	29%	43%	42%
Families below poverty level**	16%	14%	15%	8%	4%	12%	9%
Employment in Professional or Managerial Positions	25%	20%	14%	24%	47%	35%	29%
Attendance in College (four or more years)	18%	14%	11%	19%	32%	26%	21%
Median Income	$7,121	7,524	7,165	8,657	12,381	9,090	8,708***

Source: Bureau of the Census, U.S. Department of Commerce, 1974

*Tracts closest to the Medical Center.
**Poverty level changes yearly. In 1969 the level was $3,743 per year.
***Weighted average based on number of families in each Census Tract.

Remnants of the old landscaping are retained in the row of old cypress trees along the Castro Street frontage at 14th Street. All other landscaping on the site is less than ten years old. There are five concrete buildings which are linked together by open plazas at the lobby level. Sun screens vertically frame the windows of each building. Parking areas at five different levels surround the buildings on three sides; each area is separated from the other by planting strips. There is a peripheral planting area ranging in depth from 15 to 30 feet encircling the entire block.

The site of the Ralph K. Davies Medical Center is distinguished visually from the surrounding residential neighborhood by its contrast in architectural style and building scale (see Figure II-3, Page 11).

Of the five buildings on the site, the tallest is Franklin Hospital, rising about 80 feet above ground level, 120 feet above the level of Noe Street and about 60 feet above the elevation of Castro Street. Residences on Castro Street and those higher on Buena Vista overlook the site and have a view across the City. Because the site slopes downhill and away from them, and because most of the Medical Center buildings are not tall enough to block their view, most dwellings have panoramic City and Bay views over the site. The cypress trees near the corner of Castro and 14th Streets partially block some views but provide a foreground of green. The acute hospital building blocks a portion of some of the views from Castro Street dwellings. The overall height and bulk of the existing buildings of the Medical Center have been limited by conditions applied to the 1965 Medical Center Conditional Use permit (see Appendix B, Page 143).

J. Community Services

Utilities and services are provided to the R.K. Davies Medical Center by the agencies and facilities discussed below.

WATER SUPPLY AND FIRE PROTECTION

Domestic water is supplied by the San Francisco Water Department through independent connections from two separate mains. All on-site water systems are interconnected so as to allow greater flexibility and assurance of uninterrupted service. The Medical Center, therefore, does not maintain an emergency standby water supply. With the exception of the University of California Hospital, other hospitals in San Francisco do not have emergency water supplies.

Water supply for fire fighting at the Medical Center is provided by the domestic water supply system with hydrants located on Castro Street, Duboce Avenue, Noe Street and 14th Street. There is a 75,000 gallon cistern at 14th and Castro Streets to be used as an emergency water supply for fire fighting.

Fire alarms originating at the Center are responded to by units from Stations 5, 6, 21 and 36. Engine Company Number 6 is 2-1/2 blocks from the site at 135 Sanchez Street.*

GAS AND ELECTRICITY

The Pacific Gas and Electric Company provides the energy requirements of the Center. Electric power is obtained from lines on 14th Street and on Duboce Avenue. Emergency electric power can be generated on-site by diesel electric generators capable of providing full service for the Center. The on-site diesel fuel supply (9,500 gallons), which also provides emergency heating, is sufficient to provide four days of service. (Oral communication, Jack McKenna, Chief Engineer, Ralph K. Davies Medical Center, November 5, 1975.)

COMMUNICATIONS

Telephone service is provided by the Pacific Telephone Company. A radio telephone is available for emergency and disaster communication.

SEWAGE DISPOSAL

The Medical Center is served by the North Point Water Pollution Control Plant. The plant provides advanced primary sewage treatment.** While superior to conventional primary treatment, this level of treatment is not adequate to meet present state requirements or the provisions of the 1972 Amendments to the Federal Water Pollution Control Act (Public Law 92-500). The Regional Water Quality Control Board has served the North Point Plant with a cease-and-desist order (Resolution No. 72-90, adopted October 26, 1972). This resolution has been amended to permit operation during a period scheduled for implementing the San Francisco Wastewater Management Master Plan. The City's Wastewater Master Plan calls for the provision of secondary treatment of dry weather sewage now transported to the North Point Plant, to be accomplished by expansion of the Southeast Water Pollution Control Plant. This effort is expected to be completed by the end of 1979. (See EIR 74.158 for further information on the San Francisco wastewater master plan.)

In May 1976, the Regional Water Quality Board amended its cease-and desist order to prohibit any new sewage connections in areas served by the North Point and Southeast Treatment Plants (a ban on new construction). The City's appeal to the California Water Resources Control Board in June 1976 has been set aside, at the City's request, because the Regional Water Quality Baord has suspended the hookup ban on a month-to-month basis.

*Letter from Robert Rose, S.F. Fire Department, to Dr. Selina Bendix, Environmental Review Office, September 24, 1976.

**In general terms, primary treatment will provide 50 percent removal of pollutants, secondary treatment will provide 90 percent removal of pollutants, and tertiary treatment will provide 99 percent removal of pollutants.

SOLID WASTE DISPOSAL

Solid wastes generated at the Center are collected by the Sunset Scavenger Company for transport and disposal at the Mountain View (Santa Clara County) site used by the City and County of San Francisco. This site has approximately four years of remaining capacity.

Potentially hazardous wastes fall into two general categories: infectious and radioactive. Infectious wastes are sterilized and then treated as ordinary wastes for disposal by sewer or, if non-liquid, incinerated at the hospital. Radioactive wastes are stored at the hospital (in equipment specifically designed for this purpose) until the radioactive materials have decayed to a point at which they are no longer dangerous. Treatment and disposal of radioactive and other wastes generated by medical facilities are subject to regulation by the State of California. The Ralph K. Davies Medical Center reports that it is in compliance with all such regulations as set forth in Title 17 of the California Administrative Code.

MEDICAL CARE

Disaster planning by the office of Emergency Services in the Mayor's Office includes the Ralph K. Davies Medical Center as a Casualty Care Center (Community Safety Element, The Comprehensive Plan of San Francisco).

K. History and Archaeology

The existing Medical Center traces its origins to the German General Benevolent Society, an organization of German-speaking pioneers founded in San Francisco in 1854. In 1858, the Society opened a 30-bed hospital on Brannan Street; ten years later its capacity was increased to 80 beds. In 1876, the hospital was destroyed by a fire which began in a nearby industrial building, and a new site was acquired where the Ralph K. Davies Medical Center is now located. In 1878, the second German Hospital, with a capacity of more than 200 beds, opened. For years after its opening, the second German Hospital had no near neighbors. In 1905, the cornerstone for the third hospital was laid. In 1917, the name was changed to Franklin Hospital, the name which the present hospital continues to bear.

The present site of the Ralph K. Davies Medical Center has been used for 99 years for health care purposes. Construction of the existing complex of buildings was begun in 1965 and resulted in topographic changes on the site and the razing of all buildings, fences, and roadways associated with the earlier facilities. Consequently, there is nothing remaining on or near the surface of the site of either archaeological or historic significance except decorative lighting standards, in the entrance driveways, which formerly served the seven-story red-brick Franklin Hospital. The site is in an area of "no known potential for archaeological finds", according to Heid, 1975.

IV. ENVIRONMENTAL IMPACTS

A. Geology, Soils, and Seismicity

The geologic impacts of the development of any area can be divided into two categories: causal impacts and experienced hazards. Causal impacts are those effects that the planned project may have on geologic conditions both on and off the site involved. Experienced hazards, on the other hand, are the effects which the geologic activity of the area may have on the proposed project.

FOUNDATIONS

The only likely foundation impact of the proposed project would be its effect on the load carried by the acute hospital structure's foundations. Addition of part of a sixth story to this building with a helistop on the roof would increase this load. The added loads are under the total foundation design loads for this structure since the foundations were originally designed to support an eight story building*.

Due to the high compressibility of the surface materials on the site, settlement of paved areas on the site could occur; however, the amount anticipated is not expected to be large.** The most serious damage likely to be induced is minor cracking and sagging of pavements on the site.

SEISMIC HAZARDS

During the effective 50-year life of the planned improvements, one major earthquake (7+ on the Richter scale)*** and possibly several moderate earthquakes (5 to 7 on this same scale) can be expected in the San Francisco Bay Region (Rice and Strand, 1971; Steinbrugge, 1967;

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*Letter communication: Arthur B. Smith, Jr., structural engineer for Franklin Hospital, January 30, 1974.

**This conclusion is based on data presented in Woodward-Clyde-Sherard & Associates (1964, 1965 and 1966).

***For a definition of the term "Richter scale" see footnote on Page 39.

Jahns, *et al.*, 1972). For an earthquake similar to the 1906 event, the intensity of the resultant ground motion produced in the project area is classed as "strong"* by Blume (1974); but would be weak *in comparison* with that experienced in the filled former bayland portions of the City. On the other hand, it would be somewhat stronger than that felt at directly bedrock-underlain sites in the upland areas around Twin Peaks and Mt. Sutro (Ibid.).

The specific hazards potentially faced in the project area due to seismic events are ground failure and ground motion. Rapid settlement is to be the only form of ground failure that might conceivably occur on site (Blume, 1974; Woodward-Clyde-Sherard & Associates, 1964, 1976, 1966, and 1968; Woodward-Clyde & Associates, 1969). The damage produced by such settlement should be limited to cracked pavements and broken buried utility pipelines.

Ground motion, the other potential seismic hazard, poses a somewhat more serious threat. The addition of a partial sixth story to the acute hospital, with a helistop on the roof, rasied the question of conformity with the structural requirements specified in Safety of Construction of Hospitals, Title 17, Chapter 8, of the California Administrative Code. Since the addition has been designed so as to produce a change of five percent or less in the story-applied lateral force, the change is considered to constitute a "minor structural alteration" under the provision of the above cited regulations.** Thus the structural design of the entire existing building need not be appraised using updated standards to evaluate the seismic resistance of new hospitals.

The structural evaluation required by state regulations indicates that the planned additions meet the appropriate lateral force requirements.*** The text accompanying the bulk of the evaluation+ notes that:

> "the tower portion of the building was designed as eight floors plus roof; only five floors plus roof were built. If the upper floors are not built, the available lateral load capacity at the roof and the available superimposed

*"Strong" intensity is defined as general but not universal fall of brick chimneys with cracks in masonry and brick work.
**Letter communication: Charles H. Coogan, Supervising Architect--California Department of Health, January 10, 1974.
***Letter communication: Arthur B. Smith, Jr., structural engineer for Franklin Hospital, March 15, 1974.
+Letter communication: Arthur B. Smith, Jr., structural engineer for Franklin Hospital, January 10, 1974.

loads on each column are many times the weight of the proposed heliport. (In consequence) this building is more than adequate for the proposed Heliport."

The architectural plans for the additions to the acute hospital have been approved by the California Department of Health,* the State agency responsible for enforcement of hospital construction safety regulations.

During the major earthquake mentioned above, ground motion may produce a considerable amount of non-structural damage to the new facilities proposed. Such damage may include broken windows, fallen false ceilings and decorative work, partially collapsed stairwells, jammed elevators, overturned or shifted interior mechanical and electrical equipment, etc. This damage while appearing to be relatively minor, may make the structure non-functional until repairs are completed.

B. Hydrology and Water Quality

The proposed project would decrease by about 15 percent the on-site area covered by landscaping. This decrease would in turn increase the total amount of runoff flows delivered by the Medical Center site to the City's sewer system. The magnitude of this increase is 3-1/2 percent or less.

The planned project may also *temporarily* increase the amount of sediment delivered to the sewer system. During construction of the new facilities planned, erosion of the bare earth exposed may increase the amount of sediment generated from the site by as much as 4,000 percent.** The amount supplied at present from this site, is about 40 pounds per acre for moderate storms. Once construction is complete the sediment yield from this site should essentially return to its pre-construction level.

C. Vegetation and Wildlife

The effect of the short-range portion of the Medical Center master plan would be associated with the construction of the Medical Research and Office Building on a portion of the Noe Street frontage. Such construction would result in a reduction of the landscaping strip on Noe Street where the building would be located and would

*Letter communication: State of California, Department of Health to David Sokoloff, Architect, October 15, 1975.
**This conclusion is based on sediment yield data presented in Knott (1973).

cause either the destruction or the transplantation of the trees and shrubs along that strip. The net result would be a reduction of vegetation, and a consequent diminution of the insect and bird population which utilizes this area.

The effect of the long-range portion of the master plan would be the destruction or the transplantation of the vegetation in a planter strip along the south wall of the existing rehabilitation center.

D. Meteorology and Air Quality

CLIMATOLOGICAL EFFECT ON HELICOPTER OPERATIONS

Flight operations at the proposed helistop would be affected by the winds, fog and clouds of the summer months in addition to the general rain and cloud patterns experienced throughout the Bay Region. During the fog season (May to September) the helistop site is partially protected by its location in the lee of Twin Peaks, Corona Heights and Buena Vista. The area south and east of the Center including Eureka Valley and the Mission receives even greater protection from the coastal fog and clouds. These neighborhoods are typically among the last in the City to fog over. By midnight, however, this topographic protection often fails and a thick ceiling of low clouds obscuring the top of Buena Vista (less than 250 feet above the helistop) exists over a broad area in all directions from the site. Once formed, this low ceiling usually does not evaporate until late the following morning. During a summer fog episode the Medical Center is often located on the dividing line between thick fog to the north and clear skies to the south. The helicopter approach route shown in Figure IV-4, Page 87, and the proposed emergency landing site in Dolores Park take advantage of the generally better vertical visibilities over the Mission. The departure route, however, would often take departing aircraft immediately into or over the fog streaming around the north side of Buena Vista. Under these conditions the proposed emergency landing site in Alamo Square may be obscured wholly or partially by low clouds.

According to the Heliport Design Guide (Federal Aviation Administration, 1969), turbulence during high wind conditions may cause adverse flight conditions at elevated landing sites. Flight tests are recommended by the Guide to determine whether adverse turbulence will unduly affect the operation, and to specify a limiting wind speed for use of the site.

SHADOWING

The influence of shadows cast on Duboce Park by present and proposed Phase I structures at the Medical Center is shown by

Figures IV-1, Page 79, IV-2, Page 80, and IV-3, Page 81, for various times of the year and hours of the day constructed by the report consultant. Figure IV-1 indicates the shadow produced late in the afternoon at the summer solstice (June 22). During this period, the Medical Center shadow remains outside Duboce Park throughout the day. Figure IV-2 illustrates the greater shadow produced in mid-afternoon in March and September. Again, as in midsummer, the shadow cast by the proposed structures will remain south of the Muni right-of-way at all hours. In December the shadow cast by the acute hospital and the Research and Medical Office Building will sweep across all of Duboce Park during the course of a day. Figure IV-3 shows the instantaneous extent of this coverage in midafternoon at the winter solstice (December 22). Only a portion of the shadowing in December is attributable to new structures built under Phase I. The new structures built atop the acute hospital would, in the course of a day, block the sun along a strip of park property which currently experiences sunshine even at the winter solstice.

The Disability Center and parking garage, to be built during Phase II adjacent to 14th Street, would have little off-site shadow impact because at 38°N, the latitude of the site, shadows are most frequently cast north of the obscuring object.* The most extensive off-site shadowing from these Phase II structures would occur just after sunrise and just before sunset near the time of the summer solstice (June 22). During these hours, the Disability Center would shade the western (early morning) and eastern (late afternoon) portions of 14th Street. From mid-morning to mid-afternoon, however, the shadow would be confined entirely to Medical Center property.

The larger structures proposed can be expected to alter the local wind patterns. Typically, large structures do change the wind speeds and direction at ground level in their immediately adjacent areas. These altered wind patterns can only be quantified with model studies in a wind tunnel which were not done. Based on experience with such model studies, the Department of City Planning concluded that adverse effects at the pedestrian level would not be expected for this project.

AIR QUALITY

Carbon monoxide would be generated by the new motor vehicles attracted to the Center by the new elements of the Phase I and II Medical Center Master Plan. Carbon monoxide concentrations that may be experienced on the sidewalks adjacent to the Center were determined by utilizing the modeling technique recommended by the Federal Highway Administration (1974). The basic input to this model consists of the projected peak-hour traffic loads added to adjacent streets by Phase I and Phase II (see Table IV-1, Page 82).

*The parking garage, in particular, would have little off-site effect because it would protrude 20 feet above the present surface.

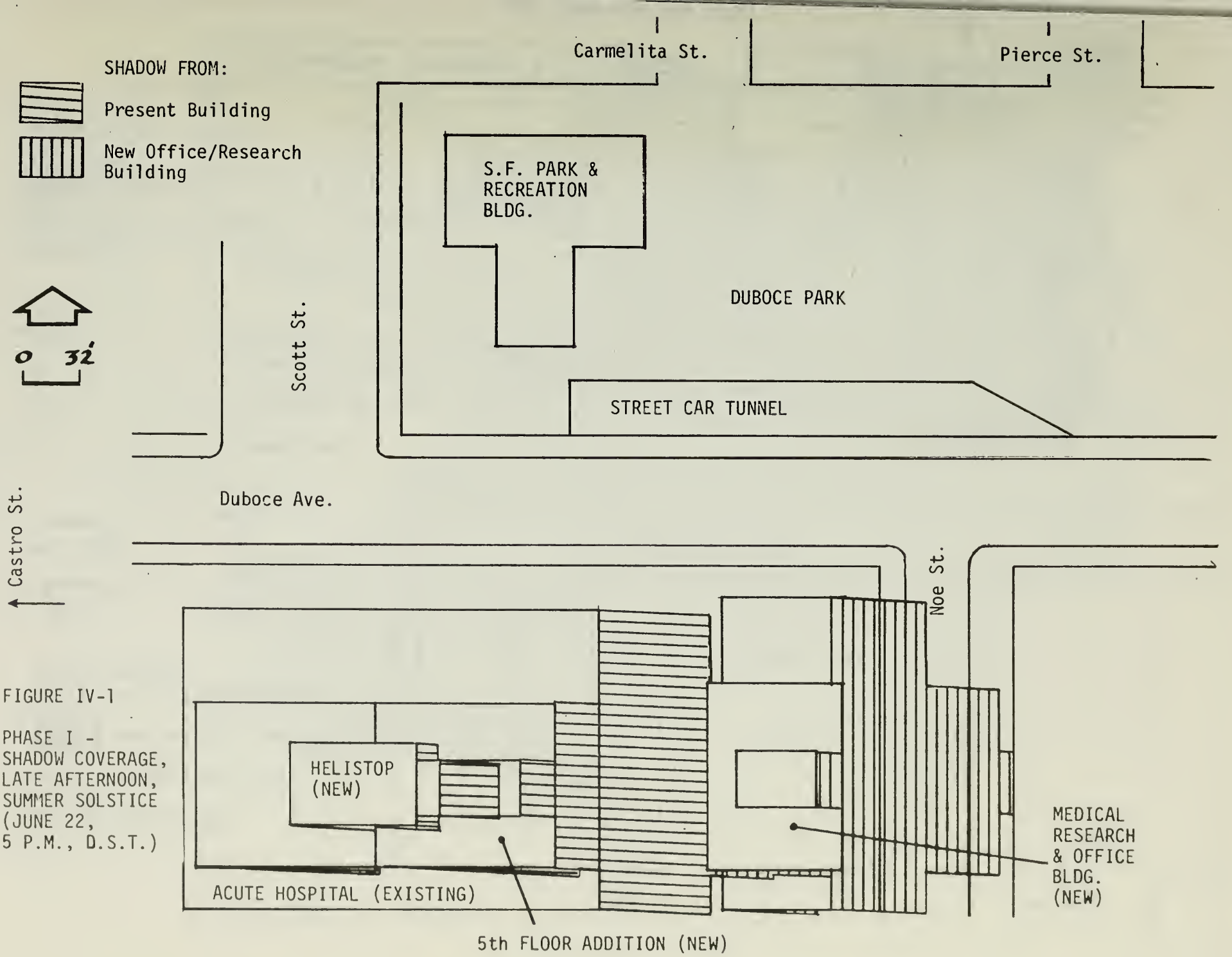


FIGURE IV-1

PHASE I - SHADOW COVERAGE, LATE AFTERNOON, SUMMER SOLSTICE (JUNE 22, 5 P.M., D.S.T.)

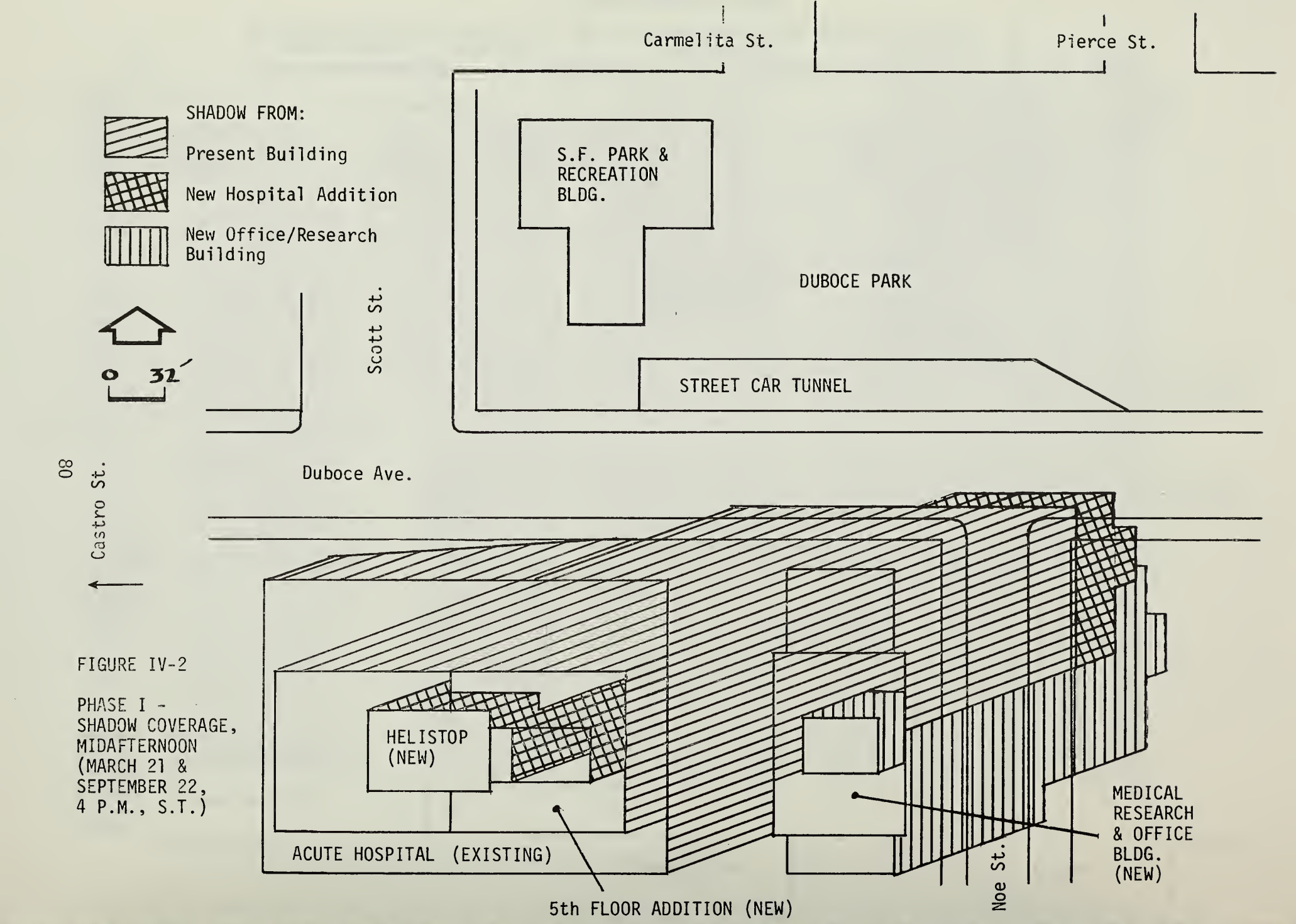


FIGURE IV-2

PHASE I - SHADOW COVERAGE, MIDAFTERNOON (MARCH 21 & SEPTEMBER 22, 4 P.M., S.T.)

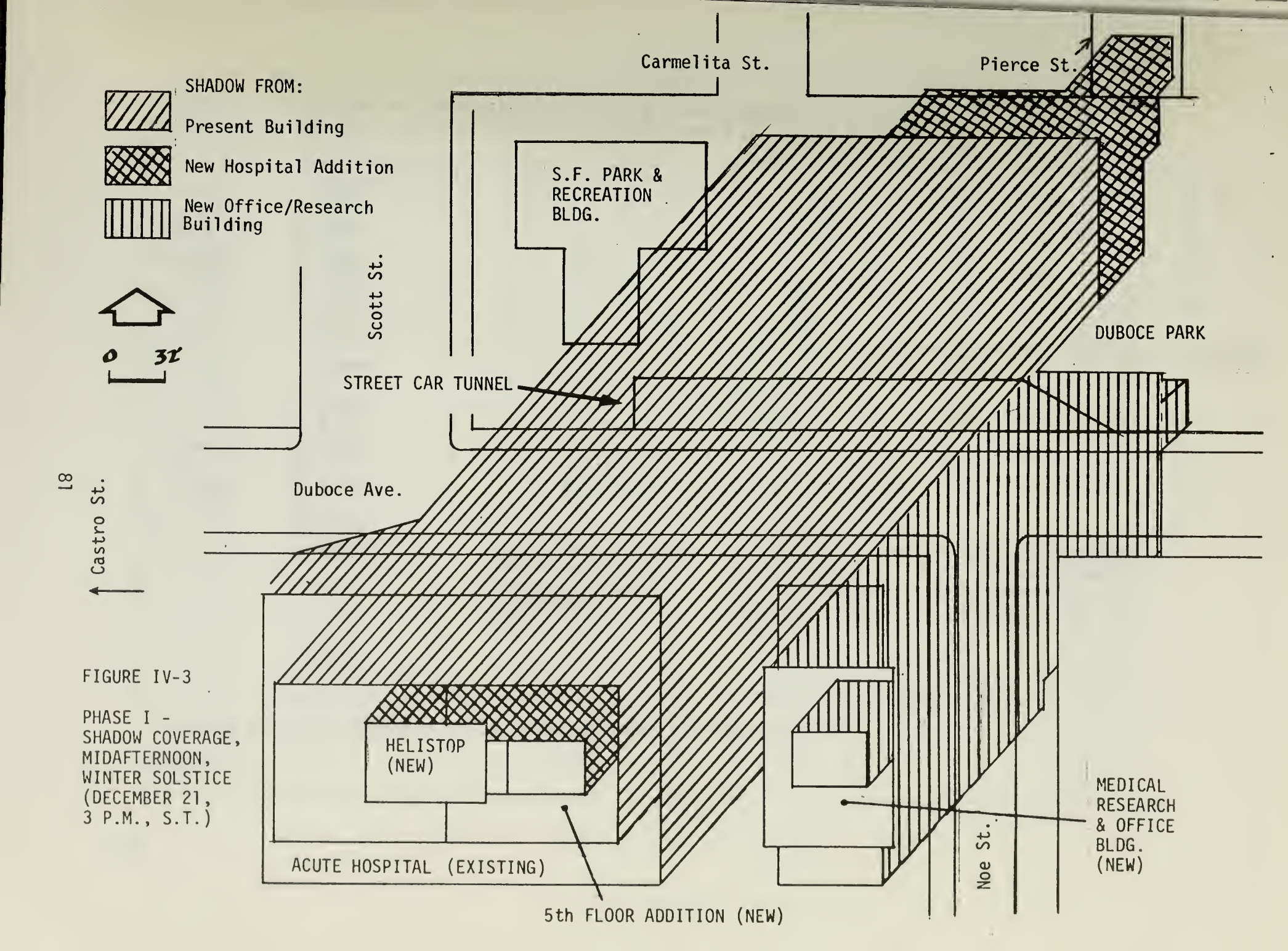


FIGURE IV-3

PHASE I - SHADOW COVERAGE, MIDAFTERNOON, WINTER SOLSTICE (DECEMBER 21, 3 P.M., S.T.)

TABLE IV-1

PROJECTED PEAK-HOUR CARBON MONOXIDE CONCENTRATIONS IN 1980 AND 1990

	Street	Peak-Hour (Non-project) Carbon Monoxide Concentration (Parts per million)*	Peak-Hour Project Traffic Carbon Monoxide Concentration (Parts per million)*	Increase in Carbon Monoxide Concentration Caused by Project
1980 (PHASE I)	Castro	4.8	0.1	2%
	14th	1.4	0.2	14%
	Noe	0.7	0.3	42%
	Duboce	3.1	0.2	6%
1990 (PHASE II)	Castro	2.6	0.1	4%
	14th	0.8	0.1	13%
	Noe	0.5	0.05	10%
	Duboce	1.7	0.05	3%

*The national one-hour standard (maximum allowable level) for carbon monoxide is 35 parts per million.
Source of carbon monoxide concentrations, Federal Highway Commission, 1974.

Conservative, "worst-case", meteorological conditions were assumed to occur during the peak flow period that would restrict the dispersion of pollutants generated by the new traffic. These assumptions included a wind speed of one to two miles per hour blowing at an acute angle to each street and an extremely stable atmosphere that would inhibit vertical mixing.

These data were run through the model to produce the sidewalk concentration values attributable to each development phase and the results are shown in Table IV-1, Page 82. Phase I and II are seen to add less than 0.5 part per million to neighborhood carbon monoxide concentrations. For comparison, the 1975 peak-hour carbon monoxide concentration adjacent to Castro Street, which has the highest peak-hour traffic volume, is calculated to be 6.0 parts per million.* The peak-hour carbon monoxide concentrations in Table IV-1, Page 82, decline throughout the period, despite increasing traffic volumes, because of the implementation of the California motor vehicle exhaust emissions control program. It should be noted, however, that the decline in peak-hour carbon monoxide concentrations adjacent to the Medical Center would be more rapid if Phase I and Phase II of the Hospital Master Plan were not built.

Persons with circulatory and respiratory problems are particularly susceptible to the adverse health effects associated with carbon monoxide. The ventilation intake openings in the Phase I and II patient care buildings would be located at rooftop level thereby minimizing the amount of carbon monoxides circulated through them. Except for one ground-level ventilation intake opening at the acute hospital all existing air vents are also located on rooftops. With these arrangements, the carbon monoxide concentrations within the Medical Center buildings will be lower than street level proportions which are seen to be below the maximum allowable standard.

E. Transportation

PHASE I--1980

The additional motor vehicle trips generated by the Medical Center upon the completion of Phase I in 1980 were calculated by applying the appropriate trip generation factors developed by CALTRANS (1970 and 1974) to the proposed traffic generating elements

*The national one-hour and eight hour standards (maximum allowable levels) for carbon monoxide are 35.0 parts per million and 9.0 parts per million, respectively. The national one-hour and eight-hour standards for this pollutant are levels of air quality that were set to protect the public health with an adequate margin of safety.

of Phase I and to the known traffic generating characteristics of the Center. A listing of the trip generation factors used in the preparation of this section is contained in Appendix D, Page 147. Existing two-way trip generation data is taken from the survey given in Appendix I, Page 157.

The results are shown in Table IV-2, Page 85, for the 24-hour, morning peak hour, afternoon peak hour, and the peak evening visiting hour periods. Total daily vehicle trips generated by the Medical Center would increase by 32 percent from the current 2600 trips to 3430 trips. The morning and afternoon peak traffic hours generated by the Center would increase by 38 percent and 48 percent, respectively. The total number of trips generated during the peak evening visiting hour, however, would remain unchanged from the present level because Phase I elements would add little or no trip activity during this portion of the day.

Approximately 25 of the 830 new daily vehicle trips attributable to Phase I would be related to the delivery of goods and supplies to the Center by automobiles (20 trips) and trucks (5 trips). Most of this additional activity would use the Duboce Avenue driveway serving the receiving and loading area behind the Diagnostic Center.

If continued utilization of public transportation facilities at the present patronage levels is assumed, Phase I would add about 325 Muni passengers per day or about 50 passengers during the peak afternoon hour (see Table IV-3, Page 86). The Muni system could probably absorb these additional passengers if the impact is spread fairly evenly among the eight lines serving the area.* And similarly, between 1975 and 1980, the number of daily pedestrian trips would rise from the current 460 to 583, representing an increase of approximately 123 pedestrians per day.

Nearly all of the new motor vehicle trips generated by Phase I would be caused by the new Research and Medical Office Building to be built on the Noe Street frontage. The proposed design of Phase I would result in the spread of vehicle activity from the present Castro Street/upper Duboce Avenue driveways to Noe Street. The growth of a second center of auto activity is facilitated by the vehicle access design elements of Phase I. Automobile access to the new research and office structure and the nearby parking lot would be via a drive-through street entrance located on Noe Street about 100 feet south of Duboce Avenue, a new lot entrance in mid-block on Noe Street, and via the existing parking lot entrance on 14th Street (see Figure II-4, Page 13). It is estimated that 60 percent to 70 percent of the 800 vehicle trips per day generated by the new facility would affect some portion of Noe Street as drivers utilize the drive-through feature to discharge passengers, or pass in and out of the new parking lot entrance on Noe Street. The Public Utilities Commission indicates that the Duboce Avenue and Noe Street intersection is presently hazardous due to the conflicts between vehicles, streetcars and pedestrians. Phase I vehicle traffic may add to this problem.

*Personal communication with Mr. Lawrence Sauve, Public Utilities Commission staff, August 23, 1976.

TABLE IV-2

RALPH K. DAVIES VEHICLE TRIP-ENDS GENERATION*

	24-Hour	AM Peak Hour (7 AM-8 AM)	PM Peak Hour (3 PM-4 PM)	Peak Visiting Hour (7 PM-8 PM)
Present Facility	2,600	260	286	130
Phase I Elements				
Fifth Floor Addition	35	7	8	0
Research Space	105	21	24	0
Medical Offices	690	70	104	0
SUBTOTAL	3,430	358	422	130
Phase II Elements				
Research/Training Space	145	29	33	0
Treatment/Office Space	475	50	70	0
TOTAL	4,050	437	525	130

*Trip generation factors are given in Appendix D.

TABLE IV-3

RALPH K. DAVIES MUNI PASSENGER TRIP GENERATION *

	24-Hour	AM Peak Hour (7 AM-8 AM)	PM Peak Hour (3 PM-4 PM)	Peak Visiting Hour (7 PM-8 PM)
Present Facility	1,000	100	110	50
Phase I Elements				
Fifth Floor Addition	14	3	3	0
Research Space	41	8	9	0
Medical Offices	270	27	40	0
SUBTOTAL	1,325	138	162	50
Phase II Elements				
Research/Training Space	56	11	13	0
Treatment/Office Space	186	19	28	0
TOTAL	1,567	168	203	50

*Trip generation calculations are given in Appendix D.

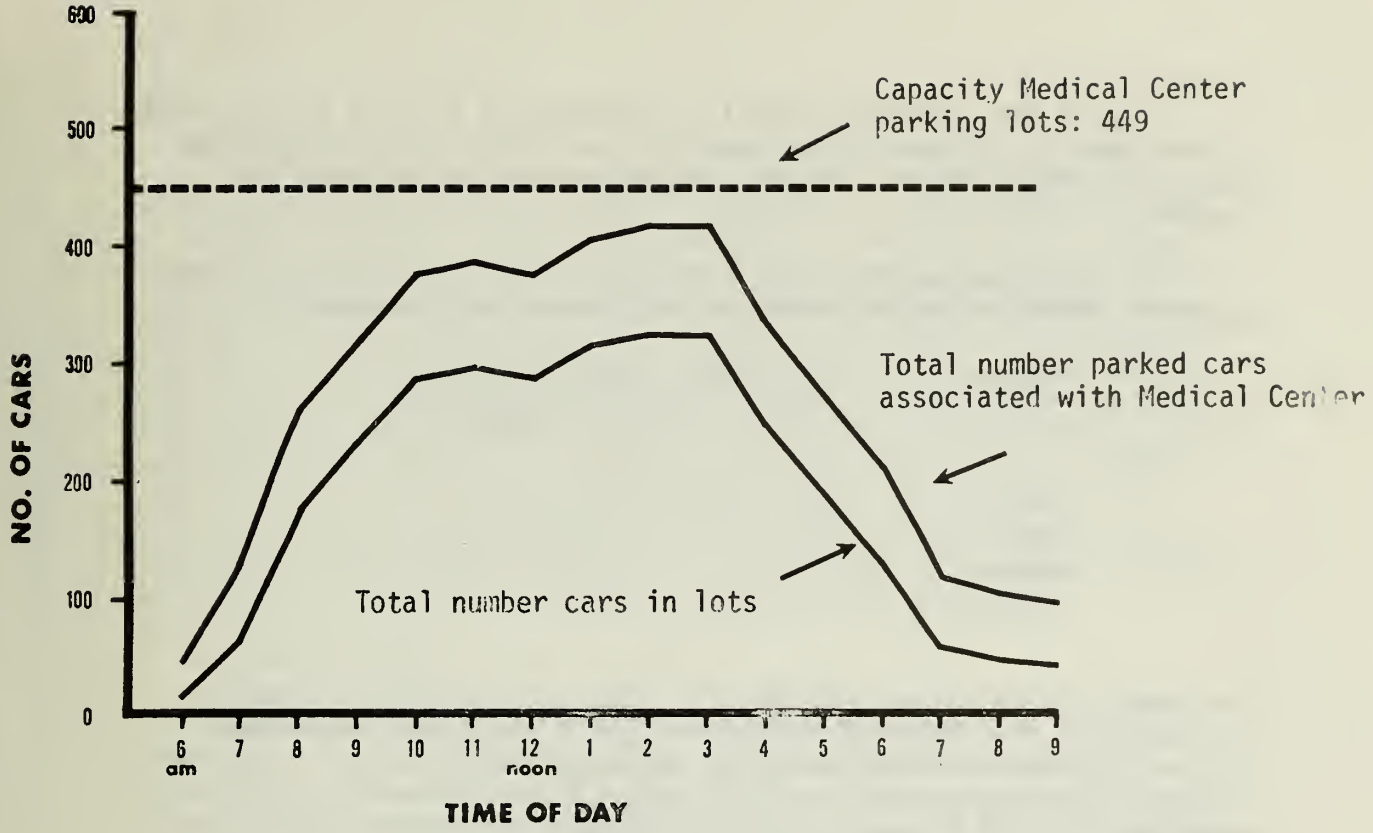


FIGURE IV-4 ESTIMATED MEDICAL CENTER GENERATED PARKING, PHASE I

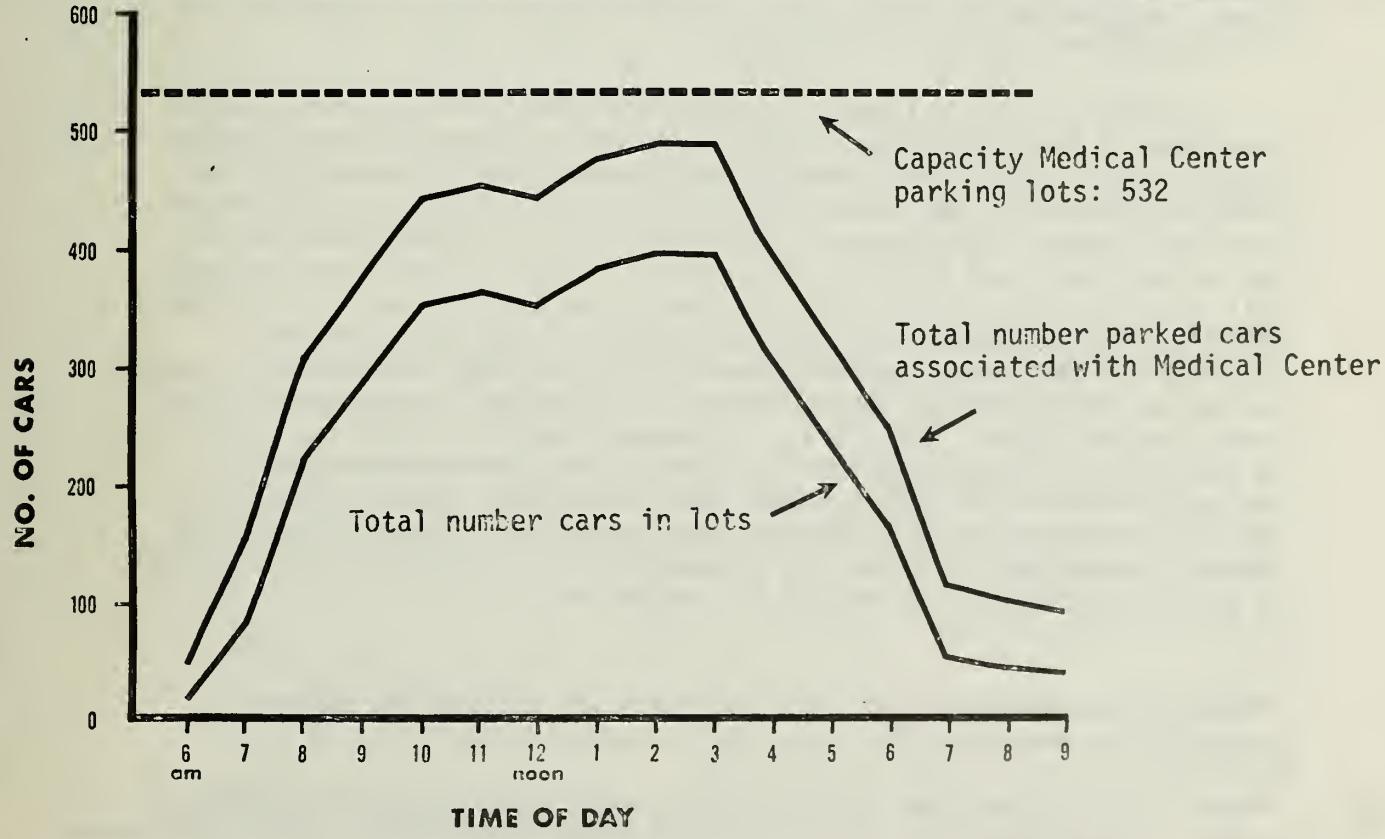


FIGURE IV-5 ESTIMATED MEDICAL CENTER GENERATED PARKING, PHASE II

During the afternoon hospital peak hour (3 P.M. to 4 P.M.) Phase I developments, primarily the Research and Medical Office Building, would add about 140 new vehicles to the streets surrounding the Center.

It is estimated that the following new two-way traffic volume would be added to the indicated streets during this period:

Street	Phase I Vehicle Volume (3 PM - 4 PM)
14th	32
Noe	52
Duboce	32
Castro	26

The impact of this new load upon the four nearby intersections was estimated by distributing these trips about the Center according to their sources and destinations, by adding these values to anticipated 1980 neighborhood traffic levels,* and by examining the resulting traffic volumes at each intersection with the aid of the *Highway Capacity Manual* (Highway Research Board, 1966). At the two signalized intersections on Castro Street, where Phase I traffic would constitute two percent to three percent of the peak-hour street flow of approximately 1,400 vehicles, the level of service during this period would still be level C.**

Growth of street traffic and the additional volumes resulting from Phase I would increase conflicts on Castro Street between southbound through traffic and incoming southbound traffic attempting to turn left and enter the main hospital driveway. Under existing peak-hour conditions, this maneuver occasionally causes queuing behind the turning auto and prevents southbound through drivers from taking full advantage of a green light at Castro and 14th Streets. According to 1974 traffic survey data and ESA analysis, present use of this driveway by southbound vehicles during the 3 to 4 P.M. period is estimated as twelve inbound trips, while Phase I is expected to add about two or three inbound trips. Similarly, increased conflicts could be expected at the intersections of Castro and 14th Streets between northbound through motorists on Castro Street and northbound motorists on Castro Street attempting to make the left turn onto 14th Street. Occasional queuing occurs behind a turning automobile at this intersection because of limited passing clearance on the right.

*Neighborhood traffic levels for 1980 were calculated by increasing presently observed traffic counts by an annual growth rate of one-half percent for the 1975-1980 period.

**Level C is in the zone of stable flow with satisfactory operating speeds. See Appendix F, Page 150, for definitions of other levels of service.

At the sign-controlled intersections of Noe Street/Duboce Avenue and Noe Street/14th Street, peak-hour traffic would continue to operate smoothly. At the intersection of Noe Street and Duboce Avenue, the projected 1980 peak-hour demand is approximately 1,150 vehicles which is 44 percent of the probable capacity* of the intersection. At the intersection of Noe and 14th Streets, the projected peak-hour traffic demand is approximately 660 vehicles which is less than 40 percent of the probable capacity* of the intersection. Since projected peak-hour volumes are far below intersection capacity, installation of signals would therefore not be warranted at either intersection. At the Noe Street/Duboce Avenue intersection, in particular, traffic flow onto or off Noe Street is facilitated by the breaks in the through traffic (no stop required) on Duboce Avenue provided by the upstream traffic signals on Castro Street.

PHASE II-1990

The additional motor vehicle trips generated by the Medical Center upon the completion of Phase II in 1990 were calculated following the procedures applied to Phase I. See Appendix D, Page 147, for a listing of the trip generation factors used in the preparation of this section. The results are shown in Table IV-2, Page 85, for the 24-hour, morning peak hour, afternoon peak hour, and the peak evening visiting hour period. Total daily vehicle trips generated by the Center are projected to increase by 18 percent over the Phase I levels, from 3430 trips in 1980 to 4050 trips in 1990. The morning and afternoon peak hours generated by the Center would increase by 22 percent and 24 percent, respectively. The total number of vehicle trips generated during the peak evening visiting hour would remain basically unchanged from 1975 levels. Again, as with Phase I, the elements that are planned for development during Phase II would produce very little traffic during this portion of the day.

Approximately 20 of the 620 new daily vehicle trips attributable to Phase II would be related to the delivery of goods and supplies to the Center by automobiles (16 trips) and trucks (four trips).

Continued utilization of public transit at present patronage levels would result in Phase II adding about 242 Muni passengers per day or about 41 passengers during the peak afternoon hour (see Table IV-3, Page 86). If the hospital successfully encouraged use of public transit, this estimate would be higher. Assuming these new passengers are divided fairly evenly among the eight nearby Muni routes it is anticipated that the system would be able to absorb the additional load.** And, similarly, if the percent of walking trips to and from

*Highway Research Board, 1966.
**Personal communication: Mr. Lawrence Sauve, Public Utilities Commission staff, August 23, 1976.

the Center remains unchanged, the number of daily pedestrian trips would rise from 583 in 1980 to 689 in 1990, representing an increase of approximately 106 pedestrians per day.

Phase II would continue the growth of traffic activity in the eastern portion of the Center that was initiated by the development of two new access points on Noe Street in Phase I. Because of the location of the Phase II plan elements with respect to driveway entrances, the following new traffic volumes would be added to the indicated streets during the afternoon peak hour:

Street	Phase II Vehicle Volume (3 P.M.-4 P.M.)
14th	35
Noe	19
Duboce	18
Castro	30

The impact of this new load upon the four intersections adjacent to the Center was estimated by adding these values to anticipated 1990 traffic levels* and by examining the resulting traffic volumes at each intersection with the aid of the *Highway Capacity Manual* (Highway Research Board, 1966). At the two signalized intersections on Castro Street, where Phase II traffic would constitute two to three percent of the peak hour (3 P.M.-4 P.M.) street flow, the level of service would continue to be level C.** However, the conflicts on Castro Street described in Phase I between through and left-turn traffic would continue unless the suggested mitigation measures would have been implemented (see Page 119).

At the sign-controlled intersections of Noe Street/14th Street and Noe Street/Duboce Avenue, Phase II traffic would constitute seven percent and three percent, respectively, of the peak-hour (3 P.M. to 4 P.M.) street flow. The projected 1990 peak-hour (3 P.M. to 4 P.M.) traffic demand at Noe Street/14th Street is approximately 800 vehicles (53 percent of intersection capacity) while the projected peak-hour demand at Noe Street/Duboce Street is about 1310 vehicles (50 percent of intersection capacity). These volumes are within the probable capacities*** of the intersections and indicate they would continue to operate satisfactorily through this time period without signalization.

*Neighborhood traffic levels for 1990 were calculated by increasing 1980 volumes by an annual growth rate of one-half percent for the 1980-1990 period.

**See the Appendix for definition of levels of service. Note that this calculation takes into account the planned reopening of Duboce Avenue to westbound traffic at Market Street since the volume data used for Duboce Avenue was taken prior to closing of the street at Market.

In general, the total number of traffic accidents on a given road segment increases as the traffic volume on that segment increases.* It is likely that the additional traffic generated by Phases I and II would therefore result in an increase in the total number of traffic accidents occurring in the vicinity of the Medical Center, although the magnitude of this increase is unknown. It is probable, however, that the percentage increase of accidents related to Phase I and Phase II traffic would be small relative to the overall accident level in the area because of the difference in volume between project-generated traffic and existing traffic on nearby streets. By 1990 it is estimated that Phases I and II would generate about 1,450 trip ends per day (Table IV-2, Page 85). By comparison, Castro Street and Duboce Avenue, the busiest streets near the Medical Center, are likely to carry more than 20,000 and 13,000 vehicles per day, respectively.

Another potential accident hazard associated with the project is the helistop operation. According to the Federal Aviation Administration data on 1975 helicopter accidents,** the frequency of accidents for all types of operations is approximately one per 10,000 flights. For medical emergency operations, the accident rate would be one percent or less of the above rate. Therefore the expected accident rate for the Medical Center operations would be in the order of one per million operations.

F. Parking

After completion of Phase I, 449 on-site parking spaces would be provided. Phase II would raise the total number of spaces to 532. Code requirements for the facilities under Phases I and II are 377 and 512 spaces, respectively (see Tables II-1 and II-2, Pages 33 and 36).

Under Phase I (1980) vehicle trips generated by the Center are projected to increase by over 30 percent. Based on this increase in activity, the demand for parking generated by the hospital is projected as shown in Figure IV-4, Page 87. Total parking requirements during peak hours (2 P.M. to 3 P.M.) would increase to an estimated 414 cars; the estimated increase in street parking demand is less than five spaces. This increase would result because the adjacent streets are nearly at capacity. The result is borne out by the hourly relationship between the number of hospital-generated

*Personal communication with Mr. Robin Kirby, Metropolitan Transportation Commission, August 11, 1976.
**Telephone conversation with Mr. John Smith, Safety Analysis Section, Federal Aviation Administration, Washington D.C., August 1976.

street-parked cars and the total number of parked cars generated by the hospital. Under the existing situation, the data shows a constraining effect during peak hours. That is, as the total number of parked cars increases, the absolute increase in the number of hospital-generated street-parked cars gets smaller and smaller. Conversely, the proportion of cars parked in the on-site facilities increases as the total increases. This is not to say that the on-street parking situation would not get worse, it just indicates that it could not get much worse since adjacent streets are already filled to capacity.* Data from Figure III-7, Page 57, on weekday street-parking availability demonstrates that for the existing situation parking is always available one or two blocks away from the Medical Center. This suggests that if on-site parking is available, drivers will use it rather than park more than a block away.

Under Phase I development, the parking capacity would be eight percent greater than the estimated total number of vehicles associated with the Medical Center seeking parking during the peak period of the day. This is contrasted with a nine percent deficit in existing parking capacity versus the estimated demand as shown in Figure III-6, Page 55. It should be kept in mind, however, that these estimates are projections of averages and, as such, should be viewed with caution consistent with the uncertainties and variabilities involved in estimation.

Phase II (1990) shows a similar pattern to Phase I (1980). Vehicle trips are projected to increase by almost 20 percent over Phase I activity. Accordingly the demand for parking generated by the hospital is projected to reach an average of 490 cars during the peak hours (see Figure IV-5, Page 87). As in Phase I, the parking capacity is in excess of the estimated parking requirements during peak use hours (42 spaces or about eight percent). Again, a relatively low increase (less than five cars) in the demand for street parking during peak hours is expected over Phase I. The already limited availability of street parking is responsible for the low figure. This assumes no major societal shift in the use of private vehicles in future years, nor any change in the rates or operating basis of the hospital parking lots. An increase of fees,

*An additional 13 street-parking spaces along Noe Street are proposed to be built by the Medical Center which should relieve the situation somewhat. However, because the limiting factor on hospital-generated street-parking appears to be the availability of nearby street-parking spaces, only a fraction of the 13 would be available for non-hospital users. In other words, the effect of the additional spaces would probably be to shift some of the cars from the fee-parking lots to the street. The estimated increase of less than five cars would be in addition to any such shifts.

for example, could shift more cars to the streets further away. Alternatively, a decrease in fees could shift cars to on-site parking since there would be adequate space.

Another potential factor which may affect local street parking is the recently adopted Residential Street Parking Plan. Under this plan, residents may form parking districts or areas where street parking is controlled by permit and restricted to residents of the area. The Department of Public Works' traffic engineering group has not as yet formulated specific guidelines for the organization of these districts, however, the Board of Supervisors enabling resolution specifies that at least 250 or 50 percent of the households in the proposed area must sign the petition for formation, an annual fee of $10 per vehicle permit is to be charged, and that after a public hearing is held by the Department of Public Words each plan is to be approved by the Board of Supervisors.

According to Mr. Dale Champion, the president of the Buena Vista Neighborhood Association, it is likely that several plans will be proposed in various sectors adjacent to the Medical Center. These street parking plans would be prompted by the street parking demands of the Medical Center, McKinley School and commuter use of the Muni street car station at Noe Street and Duboce Avenue. If such parking plans are adopted in the vicinity of the Medical Center, the probable effect would be to shift parking associated with the Medical Center to the on-site facilities. A shift to more use of public transit also would be expected.

G. Noise

Future development of the Medical Center would result in three types of noise impacts. These are noise generated by increased vehicular traffic, the helicopter operations, and construction.

TRAFFIC

The Transportation Section of this report provides estimates of the existing and projected auto traffic for the streets adjacent to the Medical Center. Considering the induced traffic for both project Phases I and II, the net traffic increase on Castro Street is estimated as 1.7 percent, while that on Duboce Avenue, Noe Street and 14th is estimated as 2.4 percent, 13 percent, and 12 percent, respectively.

According to a technical report on street noise in San Francisco, Bolt, Beranek and Newman (1974), a doubling of traffic volume results in a 3 dBA rise in noise level. The largest traffic volume increase (13 percent on Noe Street) would raise noise levels 1 dBA or less. A 1 dBA noise leve lincrease is not perceivable to most humans (Highway Research Board, 1972).

No additional ambulence trips are anticipated as a result of the project since the new facilities are directed toward non-emergency care except for the helistop.

HELISTOP OPERATIONS

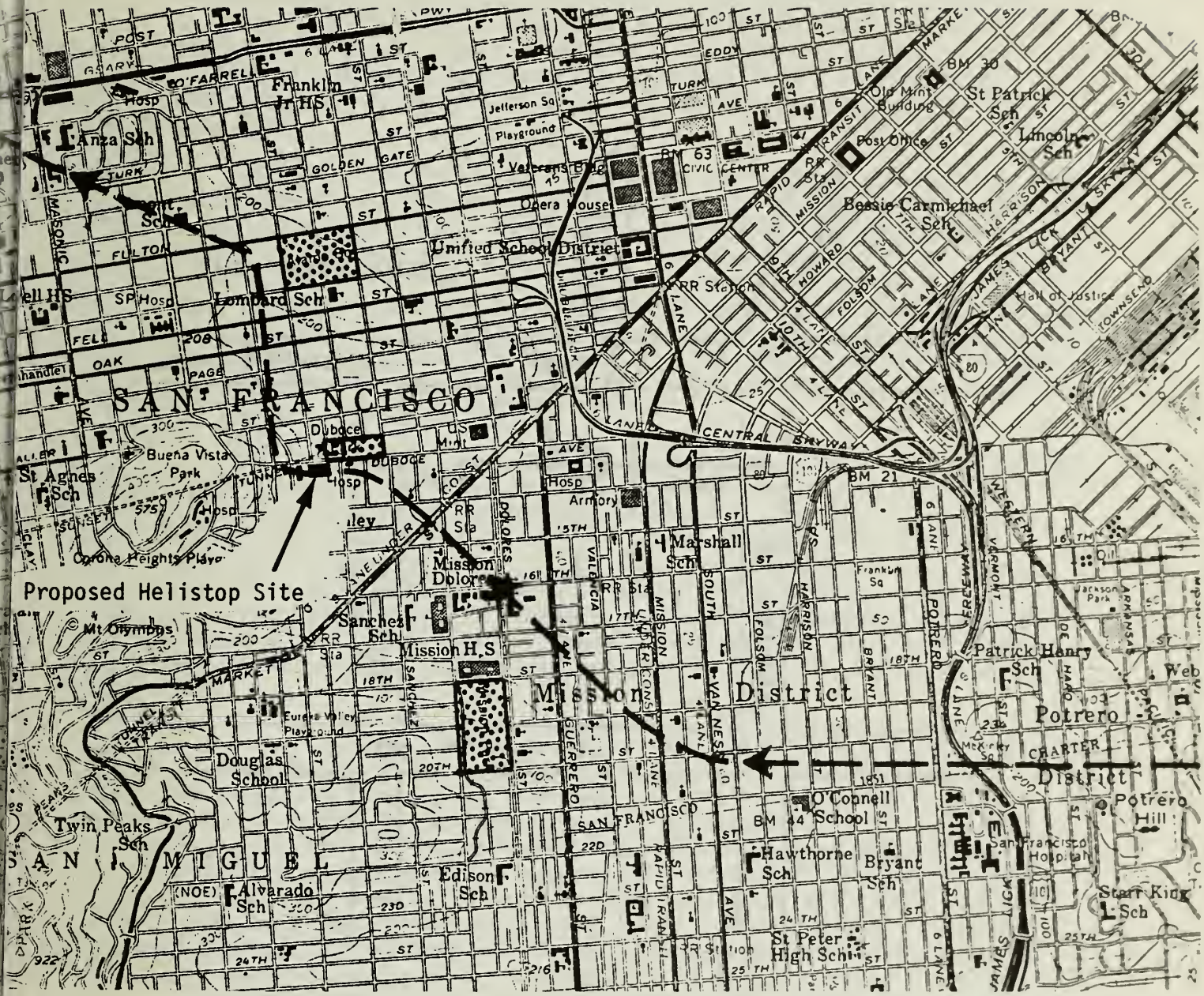
The Federal Aviation Administration (FAA) approved approach path for the proposed helistop is from the east, over the Mission District while the departure path is west then north so as to avoid Buena Vista Peak (see Figure IV-6, Page 95). The helipad would be located atop the acute hospital at an elevation of 300 feet, 26 feet above the highest of the immediately surrounding buildings. According to the FAA Heliport Design Guide, FAA (1969),* helicopters would descend and depart from the helistop at a minimum slope of eight feet horizontally to one foot vertically (8:1). Thus, the minimum height above Noe Street residences would be 160 feet for a helicopter approach, while that for departure would be 75 feet or more for buildings on Castro Street. Normally, a helicopter would descend and depart at a slope steeper than the minimum, and thus, the height above adjacent buildings would be higher than those noted above. Horizontal distances from the helipad to buildings on Castro, Duboce, Noe and 14th Streets are 350, 250, 375, and 500 feet, respectively (see Figure IV-7, Page 96).

The types of helicopters likely to be used for emergency operations are discussed in Appendix G (Page 152) which gives the results of a survey of various agencies using helicopters for medical emergencies. The results are summarized as follows:

Agency	Helicopter Used	Use Frequency	Weight Class**	Engine Type**
U.S. Coast Guard	Sikorsky S-62	3/month	Medium	Turbine
California Highway Patrol	Fairchild-Hiller 1100	4/month	Light	Turbine
East Bay Regional Park	Bell 47G and	1/week	Light	Piston
	Hughes 500 C	(summer)	Light	Turbine

*The FAA Heliport Design Guide is an advisory circular which outlines the basic physical, technical and public interest factors to be considered when planning heliport sites. The information provided does not establish regulatory requirements except where federal funds are used for the development.

**Information on helicopters taken from the Heliport Design Guide, Federal Aviation Administration, 1969.



Emergency Forced Landing Areas

Route

FIGURE IV-6 ARRIVAL AND DEPARTURE PATH FOR EMERGENCY HELICOPTERS

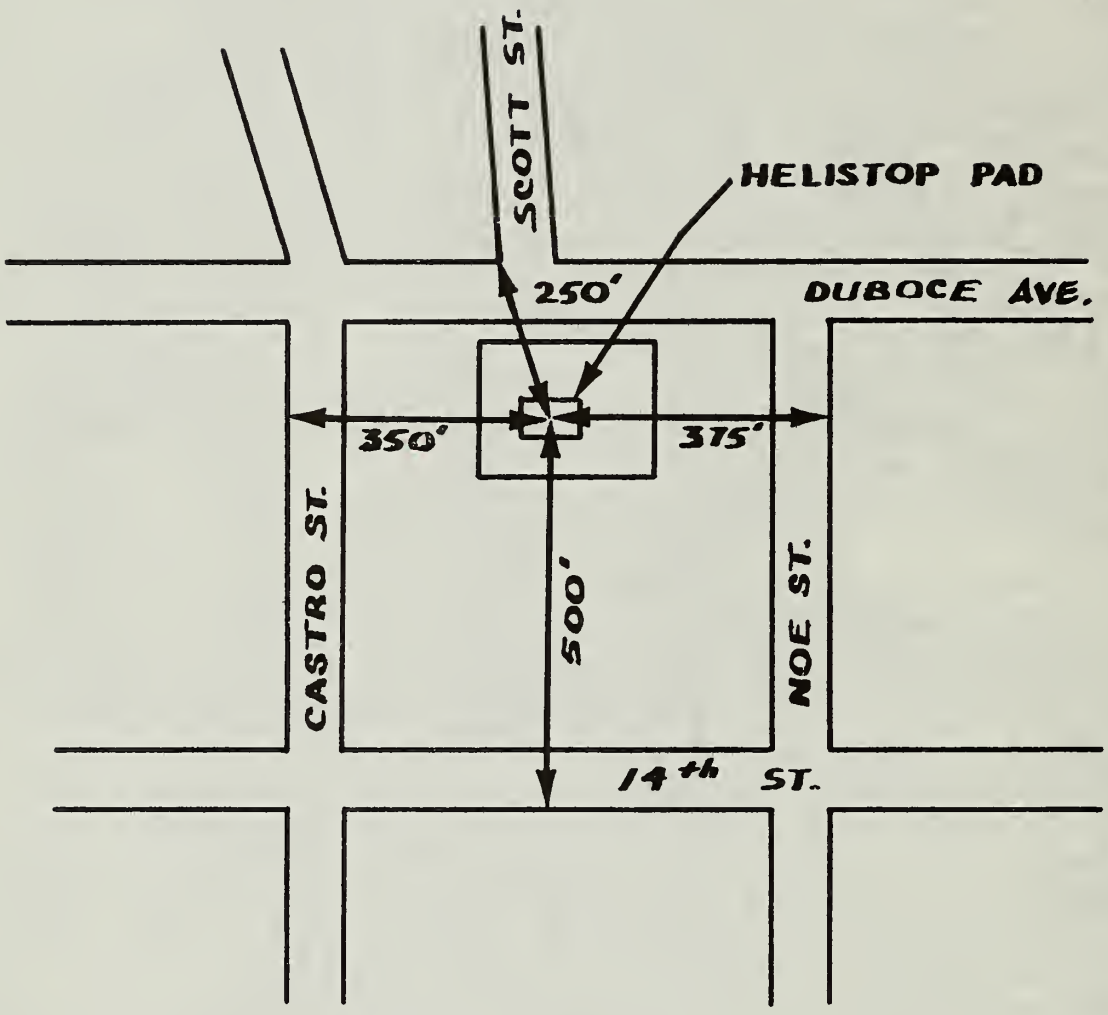


FIGURE IV-7 HORIZONTAL DISTANCES FROM THE HELISTOP TO ADJACENT BUILDINGS

The light helicopters listed above typically weigh 3000 pounds or less and carry up to four passengers. The Sikorsky S-62 used by the U.S. Coast Guard is a larger machine weighing 7,900 pounds and powered with a gas turbine powerplant. Preliminary design of the helipad allows sufficient strength to accommodate a medium weight helicopter (less than 10,000 lbs.) such as the Sikorsky S-62 or the Bell 205A.

To assess the potential noise impact of the approach and departure of emergency helicopters using the helistop at the Center, contours of maximum perceived noise levels (PNdB) have been developed using the technical approach of Bishop (1965). The perceived noise level is a quantity calculated from physical measurements of the specific noise that correlates very well with the subjective evaluation of the noisiness or annoyance. It is a parameter for non-continuous events and does not include any adjustment for the rate of occurrence of the noisy events or weighting for time of day such as the L_{dn} noise levels discussed in the noise setting section.

Perceived noise level contours are shown in Figure IV-8, (Page 98) for the landing and departure of a light or medium weight turbine powered helicopter on the prescribed flight path with a conventional landing and takeoff slope (1 to 5). These contours were developed assuming the helicopter as the only noise source without consideration of background noise levels. Smaller noise contours would result for a vertical takeoff or landing; however, single engine helicopters generally avoid such vertical takeoffs and landings for safety reasons. All the helicopters expected to use the helistop are single engine craft.

In case a light or medium weight helicopter (under 10,000 pounds) is powered with a piston engine, such as the Hiller 1100, the perceived noise level contours must be increased by 5 PNdB. These contours provide the maximum preceived noise levels as the helicopter passes overhead. Thus, residents within the noise impact area would experience these levels for a period of a minute or less during each helicopter stop at the Medical Center. For those residents located immediately adjacent to the Center, noise levels would be increased during both the landing and takeoff with a drop during the minute or two required for unloading. Assuming that this two or three minute noise event would occur only one to three times per month, it cannot be quantified as an increase in the day-night equivalent noise levels (L_{dn}).

The only approach to evaluating such a sporadic noise event is to compare it with other noise sources commonly experienced. Bishop (1965) provides several such reference noise levels in terms of PNdB. These reference noise levels are given in the Table IV-4 below:

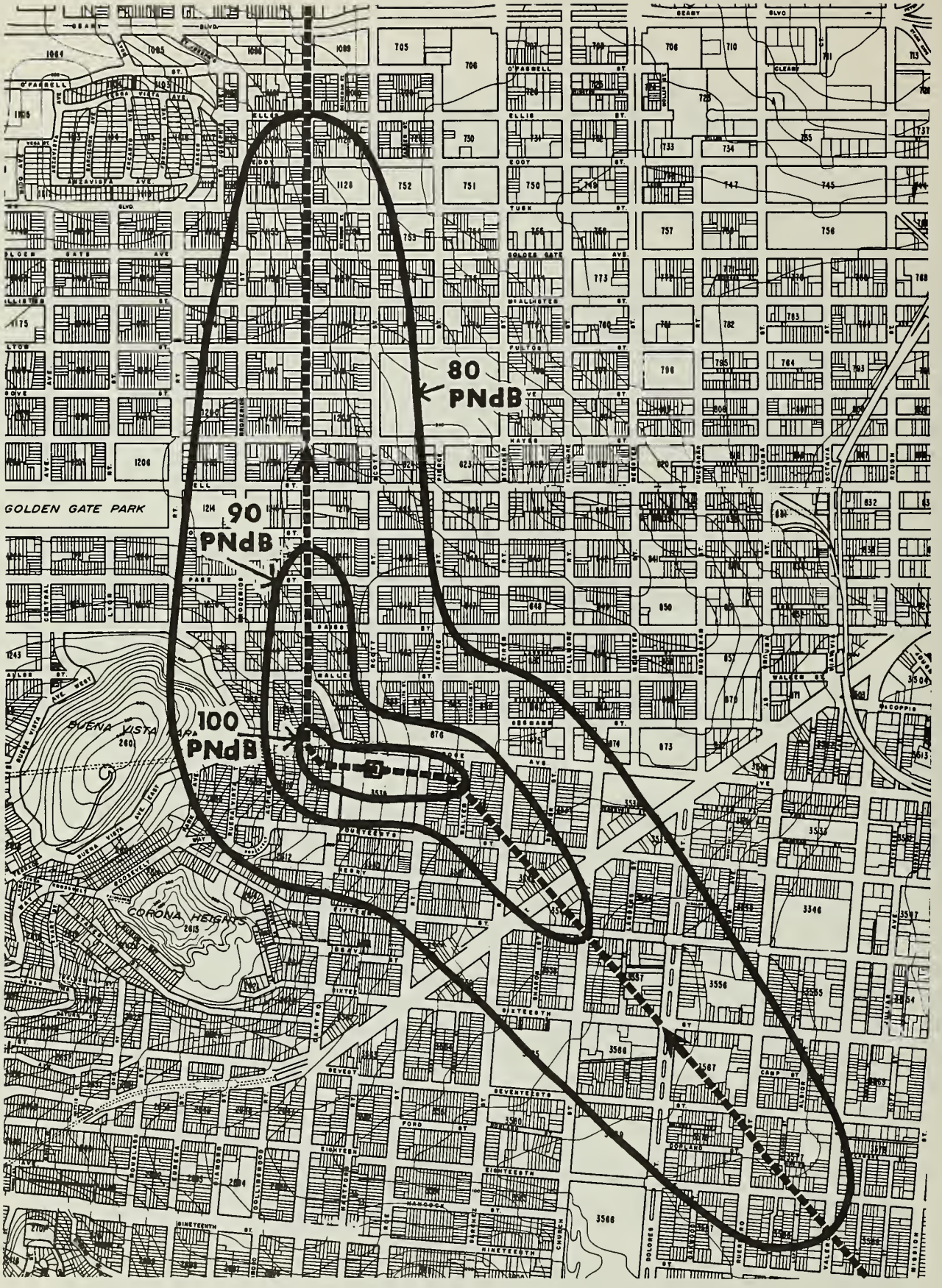


FIGURE IV-8 PERCEIVED NOISE LEVEL (PNdB) CONTOURS FOR LANDING AND TAKEOFF OF LIGHT OR MEDIUM WEIGHT TURBINE POWERED HELICOPTER

TABLE IV-4

REFERENCE LEVELS OF PERCEIVED NOISE LEVELS

Perceived Noise Level (PNdB)	Continuous Traffic Noise	Intermittent Noise Sources
80	Busy urban street at 50' distance	Truck or motorcycle accelerating at 450'
90	Busy multi-lane freeway at 50' distance	Truck or motorcycle accelerating at 175'
100		Truck or motorcycle accelerating at 50'

Using Bishop's (1965) values of 60 PNdB and 53 PNdB as representative background noise levels for urban residential areas during the daytime and nighttime hours respectively, calculations show that a helicopter landing at the Medical Center would be heard over the background noise for a distance of 2,800 feet in the daytime and 3,700 feet at night. It should be mentioned that many other transient noisy events, such as indicated in Table IV-4, will exceed these representative background levels. Many of these will exceed the perceived noise level from the helicopter.

Landing a helicopter for emergency purposes during the night hours could wake nearby residents. In addition, other sleepers may be disturbed as the helicopters transit over other areas of the City. According to the FAA,* there is no minimum operating altitude for helicopters; however, over urban areas, an altitude of 2000 to 3000 feet is recommended for safety reasons. For example, at an altitude of 2500 feet, a light turbine-powered helicopter would impose a perceived noise level of about 70 PNdB at ground level. Even allowing a 20 dB noise attenuation for frame buildings, the inside levels would be about 50 PNdB which generally disturbs sleep.

In regard to health effects which may result from exposure to high noise levels for short periods during helistop operation, data from the Central Institute for the Deaf (1971) suggest that exposure to levels of 100 dB (equivalent to 110 PNdB) for a few minutes will result in a

*Mr. Tom Ray, Flight Standards District Office, Federal Aviation Agency, Oakland.

temporary reduction of hearing threshold of 5 to 10 dB. However, this threshold reduction is regained within a few hours or less. Permanent loss of hearing threshold would occur only for much longer exposure periods or higher noise levels. The proposal would involve short exposure periods and low helicopter use frequency.

CONSTRUCTION

Noise from construction activities during completion of the various project elements will impact on the surrounding neighborhood. Each phase proposes a parking structure and a building located adjacent to the street, thus the construction activities will occur from 100 to 150 feet from the residential dwellings across the street. Typical construction periods for parking structures are six months while the large buildings would require at least a year to complete. Studies on construction noise (Bolt, Beranek and Newman, 1971) give equivalent noise levels (L_{eq})* generated for each construction phase on various classes of structures such as hospitals and parking structures.

The L_{eq} noise levels at a distance of 50 feet are sumamrized below:

Activity	Office Building or Hospital	Parking Structure
Excavation	79 dBA	74 dBA
Foundation	78 dBA	78 dBA
Erection	76 dBA	74 dBA
Finishing	76 dBA	75 dBA

Comparing these equivalent noise levels with those existing will indicate the potential noise impact. Daytime L_{eq} values for Noe Street are 65 dBA, and 75 dBA on Castro Street.** Values given above for the various construction activities can be reduced by three to six dBA due to the distance across the street to the residential buildings.

In addition to the energy time averaging approach discussed above (L_{eq}) San Francisco's Noise Control Ordinance (#274-72, approved September 20, 1972) limits emitted noise from powered construction equipment to 80 dBA at a distance of 100 feet. Impact tools are exempted, although jackhammers and piledrivers must have some kind of muffler. Also, the City noise ordinance prohibits construction activity at night which raises noise levels more than 5 dBA at the nearest property line unless a special permit has been granted. The ordinance is rigidly enforced according to the Department of Public Works.

*L_{eq} is defined as an average "A" weighted noise level on an energy basis.
**Values for L_{eq} provided by Department of Public Works, Bureau of Engineering, Mr. Cormac Brady.

Finally, the impact of construction noise from ground level sources is not expected to extend beyond the immediate streets fronting on the Medical Center because the continuous line of closely spaced structures provides a noise barrier which shields the more distant structures.

H. Land Use

The short-range development plan and the long-range development plan for the Ralph K. Davies Medical Center require no extension or expansion of the site. No private properties would be directly affected by the plan and no private uses would be displaced. The peripheral landscaped set-back areas would be retained--30 feet on Castro Street, 25 feet on 14th Street, 15 feet on Noe except at the Medical Research and Office Building, and 25 feet on Duboce Avenue. On-site planting strips would also be retained and plaza-level planting would be unaffected. The utility penthouse on the Medical Research and Office Building would be planted in a manner similar to the one on the roof of the Rehabilitation Center.

The addition to the acute hospital building of one-half floor topped by a helipad would increase the overall height of the building by 22 feet, exclusive of the elevator shaft. The top of the building, as seen from the east--the Central Freeway or Potrero Hill--would be 250 feet below the summit of Buena Vista Park. The Medical Research and Office Building, containing five levels, would be 64 feet above the Noe Street elevation and seven feet above the lobby level of the acute hospital to the west. It would be 82 feet lower than the acute hospital and would thus constitute a transition in building heights from the 40 feet permitted on the east side of Noe Street to the 65 feet and 130 feet permitted on the Medical Center site.

As stated in Section III G and shown on Figure III-8, Page 63, the site of the Research and Medical Office Building, like the entire 7.2 acre Medical Center site, is in an R-3 (Low-Medium-Density Multiple Residential) zoning district in which medical facilities are permitted as a Conditional Use. The proposed zoning under consideration by the City Planning Commission in accordance with its Resolution No. 7499 is I, Institutional, a district in which a medical center would be a permitted conditional use. Since adoption of the Planning Code in 1960, medical office buildings in a medical center complex were administratively interpreted to be related to hospital uses and legally susceptible to Conditional Use authorization in an R-3 district. The Superior Court decision of Judge Ira Brown in November 1974 in the case of Stanyan/Fulton Streets Association vs. San Francisco City Planning Commission and St. Mary's Hospital, ruled that medical office buildings are professional office buildings, a use which the San Francisco Planning

Code first specifically allows as a Conditional Use in the R-4 zoning district. Therefore, an extension westward of the R-4 zoning district presently located on the south side of Duboce Avenue east of Noe Street would be required before a Conditional Use authorization can be granted by the City Planning Commission. Consequently, an application for a change of zoning on the corner of the Medical Center site to be occupied by the Research and Medical Office Building will have to be filed by the Medical Center as a prerequisite to formal consideration and action on this aspect of the development plan. If the proposed Institutional zoning district were in effect, the entire project could be considered as a conditional use without a prior zoning change.

The long-range development plan would increase the use of the southern--14th Street--edge of the site by locating a structure on the 14th Street parking area and by adding two levels of parking in a structure on the lower Noe Street parking area. These structures would represent an increased intensity of use of the site as a Medical Center.

The short-range development plan would cover 44 percent of the site with buildings. The long-range development plan would cover 54 percent of the site with structures. In terms of floor area, the short-range plan would increase the floor area to 66 percent of that permitted by the Planning Code adopted in 1960, as amended. The long-range plan would result in a floor area of 78 percent of that permitted (see Section VII G).

The development program would have no direct impact on housing in the vicinity. The proposed zoning, if enacted, would reduce the allowable number of dwelling units in the community compared with the densities allowed by the 1960 zoning ordinance as amended, thus limiting the probable expansion of the supply of housing. Because the Medical Center is self-contained, no demand for ancillary facilities in residential buildings is anticipated, assuming the new facilities provide adequate space for proposed services.

I. Visual and Aesthetic

The proposed additions to the Ralph K. Davies Medical Center would increase the mass of buildings on the site. The buildings would be of the same style as those existing so that the architectural character of the site would not be disrupted.

Phase I, the short-range plan proposed for 1975-1980, provides for a fifth floor addition to the Franklin Hospital building on the eastern half of the building with a rooftop emergency helistop on

the roof of the existing mechanical penthouse and the addition. As the Franklin Hospital is the tallest of the existing buildings and as the other proposed buildings are lower in elevation, this would continue to be the tallest building on the site. The additional 22 feet of height would affect views from residences on Buena Vista hill as shown by Figure IV-9, Page 105. The highest vertical element in the Medical Center complex would be the 14 foot by 28 foot elevator shaft which would extend 25 feet above the flat rooftop helipad.

Also proposed as a part of the first phase of development are a five-story research and medical office building near the corner of Noe Street and Duboce Avenue and a three-level parking structure at the southwest corner of the site adjacent to 14th and Castro Streets. The five-story building would be on the lowest elevation of the site; its roof wood extend seven feet above the lobby level of the acute hospital building. Consequently, it would not affect views from above. As it would cover a space which is presently open, it would tend to narrow the Noe Street view corridor opposite the corner church and four residences, giving that portion of the street a scale and width similar to that in the blocks to the south (see the photographs with superimposed outlines of the building, Figures IV-10 and IV-11, Pages 107 and 108).

The parking structure near Castro Street would rise from three to ten feet above the sloping Castro Street elevation, separated from the sidewalk by the thirty-foot planting strip containing the old cypress trees and the younger Monterey pine trees. A three-foot parapet wall would make the total building height above the street range from six feet at its southern end to thirteen feet at the northern end. This would impair the eastern view from the sidewalk level of Castro Street across the roof of the Rehabilitation Center to the downtown skyline, but this view is partially blocked at present by the hedgerow effect of the old and new trees in the landscaped areas immediately adjacent to the sidewalk (see photograph, Figure IV-13, Page 111). Although the proposed structure could be seen from Castro Street residences, it would provide little blockage of views from residences on the west side of Castro Street as the first residential story of these houses is approximately twelve feet above the street elevation and two to seven feet above the upper level of the parking structure. Most of these residential structures have three residential floors (see Figure II-9, Page 23).

In Phase II, two structures are proposed to be added to the site between 1980 and 1990. These are a developmental disability center near 14th Street which would contain four stories above the entrance level and a three-level parking structure along Noe Street extending northward from the corner of Noe and 14th Streets.

The visual impact of these Phase II structures is illustrated by two photographs with superimposed outlines of the structures,

FIGURE IV-9

VIEW FROM THE ROOF OF A RESIDENCE ON DIVISADERO STREET, LOOKING EAST, WITH THE OUTLINE OF THE ACUTE HOSPITAL ADDITIONS AND THE DISABILITY CENTER SUPERIMPOSED

FIGURE IV-9

VIEW FROM THE ROOF OF A RESIDENCE ON DIVISADERO STREET, LOOKING EAST, WITH THE OUTLINE OF THE ACUTE HOSPITAL ADDITIONS AND THE DISABILITY CENTER SUPERIMPOSED

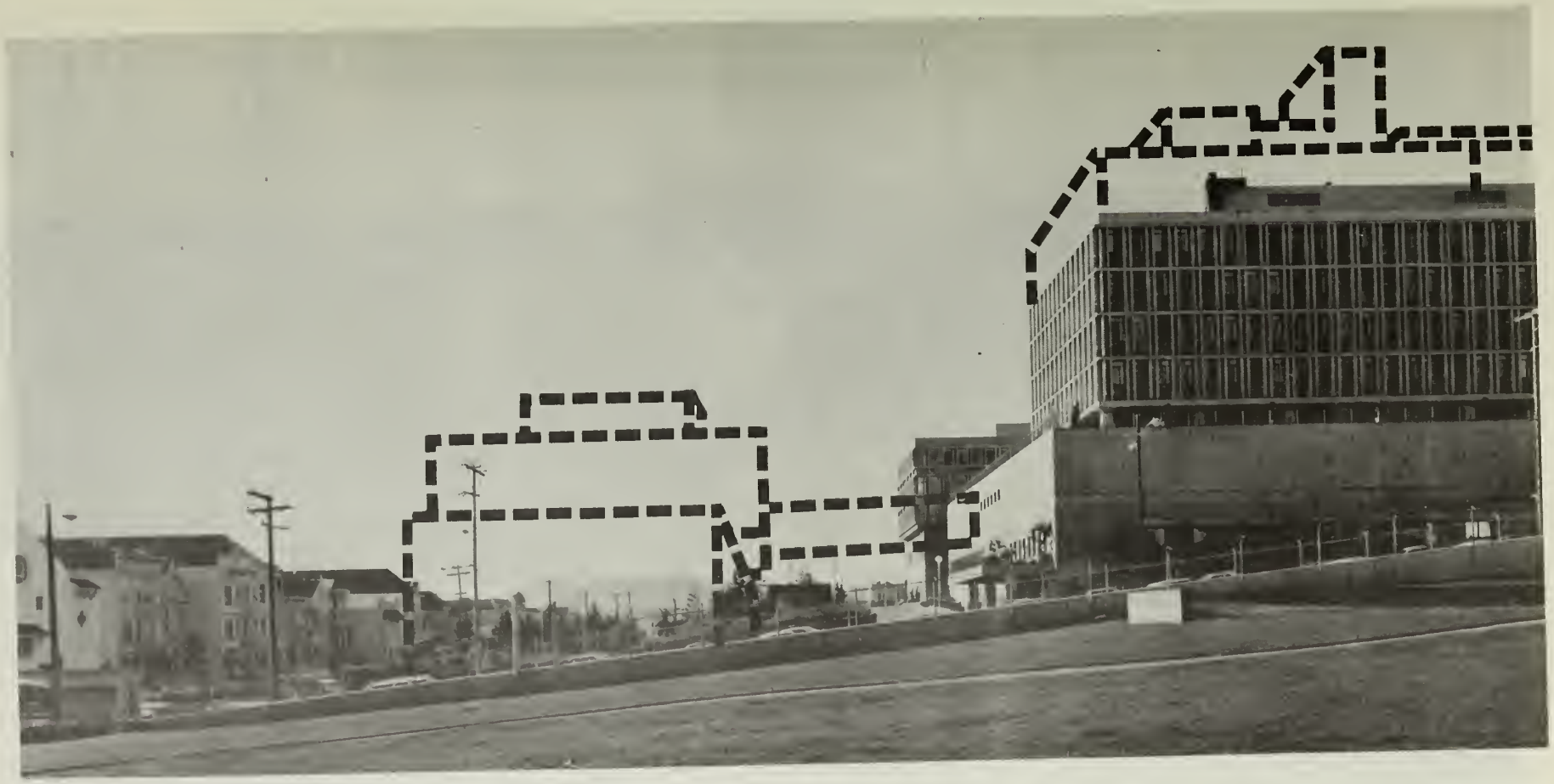


FIGURE IV-10 VIEW OF NOE STREET SOUTHWARD FROM DUBOCE PARK WITH THE OUTLINE OF THE PROPOSED STRUCTURES SUPERIMPOSED

FIGURE IV-11 VIEW OF NOE STREET NORTHWARD FROM FOURTEENTH STREET WITH THE OUTLINE OF THE RESEARCH AND MEDICAL BUILDING AND THE PHASE II PARKING STRUCTURES SUPERIMPOSED

Figures IV-11 and IV-12, Pages 108 and 110. An overall view of Medical Center from the residential area above Castro Street with all structure outlines superimposed is provided in Figure IV-9, Page 105. These photographs with the superimposed structural outlines show the general bulk and potential visual obstruction of the proposed structures in perspective views from various locations. It should be realized that the actual structures would have surface textures and external details as shown in the project description.

The site, when fully developed as proposed, would appear as a complex of buildings whose concrete mass would be screened by pines, cypress, redwood, poplars, and other trees and shrubs adjacent to each building and around the edge of the block. The slope of the site would accentuate the variation in the building heights (see Figure II-11, Page 30).

J. Community Services

Some increases in services would be required for water supply, sewerage, waste disposal, and telephone, but these increases could be served by the present facilities. There would be no obvious impacts on the present police and fire protection services provided for the site. Routine administrative review of the proposed plans by these agencies would include an analysis for any additional or unusual requirements.

The proposed additions to the Center would provide several benefits to the City's health care. Research and medical office space and expanded outpatient services would augment the technical capabilities and direct community service of the Center. A helistop atop the hospital would expand the service area and facilitate the emergency treatment capabilities of the Center. This would be a particularly valuable asset in time of an area-wide disaster resulting from a major earthquake or other major calamity.* Surface transportation at that time could be greatly impeded by debris in the streets so that air transport of critical casualties to the Center could potentially save many lives.

In the event of a disaster such as an explosion or airplane crash, the Medical Center could handle 50 to 200 persons depending on the severity of the casualties. The Center complies with standards established by the Joint Commission on Accreditation of Hospitals for coping with fires and disasters.

*Since the helistop and acute hospital structure would not be expected to fail as a result of a major earthquake, the helistop would remain operable. However, as a consequence of non-structural failures, the elevator servicing the helistop may be inoperable and it may be necessary to use only stairways for moving injured people into the hospital.

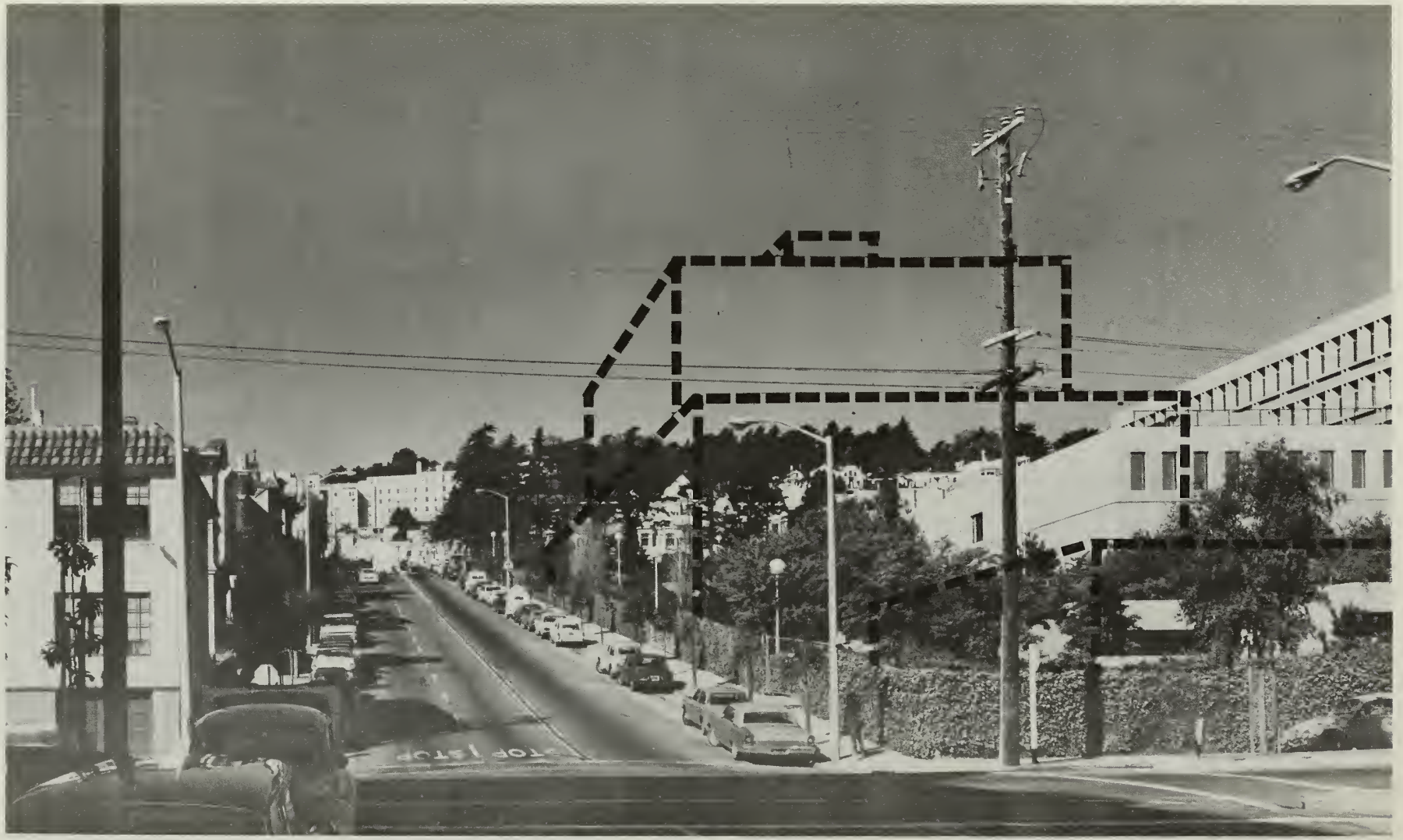


FIGURE IV-12 VIEW OF FOURTEENTH STREET WESTWARD FROM NOE STREET
WITH THE OUTLINE OF THE PHASE II DISABILITY CENTER SUPERIMPOSED

FIGURE IV-13 VIEW OF THE EXISTING MATURE TREES LOOKING NORTHWARD ALONG CASTRO STREET AT FOURTEENTH STREET

Helicopter landing facilities are not available at other hospitals in San Francisco. Patients are transferred to Letterman Hospital by ground transportation from nearby Crissey Field and the Coast Guard has used a parking lot at the U.S. Public Health Service Hospital, but no facilities are available at the private hospitals or San Francisco General Hospital. (See Appendix G, Page 152, for a discussion about helicopter landing facilities at hospitals elsewhere in the Bay Area.)

K. Energy

BACKGROUND

The following table gives estimated monthly energy consumption based on 1974-1975 consumption rates* for the Medical Center and average weather patterns for the area.

	Gas (10^5 BTUs)**	Electricity (KWH)
January	135,000	750,000
February	95,000	750,000
March	80,000	650,000
April	75,000	550,000
May	65,000	500,000
June	65,000	550,000
July	60,000	650,000
August	60,000	800,000
September	55,000	850,000
October	65,000	750,000
November	70,000	750,000
December	100,000	750,000
	920,000 x 10^5 BTUs	8,300,000 KWH

Gas consumption averages about 76,700 x 10^5 BTUs per month, making the Medical Center an interruptable customer whereby its gas supply may be cut off during periods of high regional demand. Consumption per square foot of gross interior floor space averages 23,700 23,700 BTUs per month. Electrical consumption averages about 692,000 KWH per month or 2.14 KWH per square foot of floor space per month.

*Telephone conversation and written communication, Jack McKenna, Chief Engineer, R.K. Davies Medical Center, November 5, 1975.

**10^5 BTUs = 1 therm.

Based on present square foot consumption, it is estimated that expansion of the Medical Center would generate the following incremental demands for gas and electricity:

	PHASE I		PHASE II	
	Gas (10^5 BTUs)	Electricity (KWH)	Gas (10^5 BTUs)	Electricity (KWH)
January	25,100	139,000	21,600	120,000
February	17,700	139,000	15,200	120,000
March	14,900	121,000	12,800	104,000
April	13,900	102,000	12,000	88,000
May	12,100	93,900	10,400	80,000
June	12,100	102,000	10,400	88,000
July	11,100	121,000	9,600	104,000
August	11,100	149,000	9,600	128,000
September	10,200	158,000	8,800	136,000
October	11,100	139,000	9,600	120,000
November	13,000	139,000	11,200	120,000
December	18,600	139,000	16,000	120,000
TOTAL ANNUAL	171,000 x10^5 BTU	1,540,000 KWY	147,000 x10^5 BTU	1,330,000 KWH
% OF PRESENT USE	19%	19%	16%	16%

Phase I energy requirements account for about 54 percent of the total requirements of the project. Thus, the first phase is estimated to increase gas consumption by an estimated 14,200 x 10^5 BTUs per month, on the average. Phase II should increase average gas consumption by another 12,300 x 10^5 BTUs per month. Similarly, electrical consumption is projected to increase by 129,000 KWH per month under Phase I and by another 111,000 KWH per month under Phase II. In terms of typical San Francisco residential energy use (PG&E data), Phase I improvements would consume the equivalent of 158 residential units for natural gas and 473 units for electrical energy. Phase II consumption would add the equivalent of 136 units for gas and 407 units for electricity.

Sufficient capacity exists to handle the increased electrical requirements since PG&E installed the supply facilities with the ultimate development of the Medical Center in mind. The only constraints which may exist with respect to energy use relate to the overall resource availability and policies of energy conservation. A recent ruling of the California Public Utilities Commission (Decision No. 85189 of December 2, 1975) may restrict the additional use of

natural gas by the Medical Center. The ruling affects users in excess of 50,000 cubic feet per day and allows no increased deliveries of gas or installation of new gas burning equipment if fuel requirements can be met by an alternative fuel. Since the Medical Center's existing boilers are sized to handle Phase I and Phase II requirements and are arranged to use either gas or oil for fuel, any restriction on use of natural gas would result in a switch to fuel oil.

L. Economic/Fiscal

Ralph K. Davies Medical Center employs about 650 persons and has a total annual payroll of about $9 million. This amounts to almost three percent of the employment in health services in the City and County of San Francisco which totals 23,700 according to the U.S. Department of Commerce (1972). Health service employment, in turn, accounts for about 7.5 percent of the total employment in the City (U.S. Department of Commerce, 1972). Health care employment in adjacent counties ranges between 5.6 percent and 7.3 percent.

As a nonprofit organization, the Medical Center is for the most part not subject to taxation; the exception is the medical office building on which property taxes are levied.

In the short-range (Phase I) anticipated construction costs of about $4,450,000, would generate an estimated 135 person-years of employment.* When fully occupied the Medical Research and Office Building is expected to generate about 80 new jobs (36 doctors, 13 nurses and 31 other various employees) for the Medical Center. Some of these positions undoubtedly would be filled from other facilities within San Francisco representing a shift in location of services. Others, however, especially those associated with the Research Building, might be filled from outside the City, representing a net employment increase. Based on 1975 costs, Phase II would cost approximately $2,540,000 to complete, creating an estimated 81 person-years of construction employment. Eventual operation of the Developmental Disability Center could generate up to 100 new jobs (nurses, services, clinical, matinenance, etc.);** again, some of these jobs would probably be filled from competing facilities. Based on present conditions Phase II would represent an estimated net increase of $1,280,000 a year in the hospital payroll. The movement of medical services from offices in the downtown area to the Medical Center would have an economic effect. Economic effects on patients would involve mainly convenience and transportation considerabions.

*This assumes labor costs account for 50 percent of the total construction cost at an average rate of $7.50 per hour, 40 hours per week.

**Personal communication with Mr. Jack Hauser, Vice President for Administration, Ralph K. Davies Medical Center on April 21, 1976.

The Medical Center would pay additional property taxes to the City and County of San Francisco derived from the new medical office space within the Research and Medical Office building. Assuming a 50 percent split between the two uses, property taxes, based on construction costs, are estimated to be approximately $33,000 per year.*

M. Community Attitudes

In May of 1974, the Medical Center held a series of meetings with neighbors and neighborhood groups at which it described its development plans as they had evolved at that time and at which issues of concern were discussed. Letters were subsequently submitted by resident neighbors and property owners endorsing or opposing further development.

On October 2, 1975, a regular meeting of the San Francisco City Planning Commission was held to review the Institutional Master Plan for Ralph K. Davies Medical Center, published in August 1975, and to hear public comments on the plan. At this meeting, a brief presentation was made which outlined the present and proposed development. Several neighborhood groups and citizens presented their views, all in opposition to the proposal. Seven letters from individual citizens were also received by the Commission, all against the proposal. A tape of the meeting and all letters are on file at the San Francisco Department of City Planning.

Major concerns of the community were:

- *Traffic.* Concern over the impact of further traffic congestion on nearby streets and on public safety, and over attendant increases in noise and air pollution.

- *Parking.* Concern about the impact of the existing Center and of further development on parking availability on nearby residential streets.

- *Heliport.* Concern about noise and lights associated with this facility and the danger to life and property from possible mishap.

- *Aesthetics and Scale.* Concern about the disruption of the physical scale and character of the neighborhood, the obstruction of views, and the creation of shadows in public open space.

- *Zoning.* Concern about the short- and long-term effects of rezoning the Medical Center property, or the northeast corner as described, from the R-3 to an R-4 designation.

*This assumes a 1974-75 tax rate of $12.75 per $100 of assessed valuation.

- *Public Facilities*. Concern about the added burden on taxpayers for street improvements, fire and police protection, and other public services required by the project.

- *Conformity to Neighborhood Plans*. Concern about the effects of the Center on existing planning efforts including neighborhood participation in the F.A.C.E. residential rehabilitation program.

- *Alternatives and Mitigation*. Concern about the justification for further expansion of medical centers and other institutions in San Francisco from the community standpoint, weighing all factors, and about the extent of the mitigation of adverse impacts on the neighborhood should this project be implemented.

- *Construction Impacts*. Concern about the noise and general inconvenience associated with large construction projects. This concern was based on the experience of the neighborhood during the completion of several large projects during the past 15 years.

V. MITIGATION MEASURES

A. Geology, Soils and Seismicity

The single most important measure to insure adequate foundation support for the proposed new structures would be the retention of a qualified soils engineering firm to investigate the site and prepare recommendations based on current soils engineering practice. The applicant has indicated its intention to do this and required soils studies are presently in progress.

Measures which would reduce the long-term seismic hazards for the new structures include a structural analysis for resistance to seismic shaking and design consideration of potential non-structural damage. The applicant has incorporated these mitigation measures into the project by conforming to the structural design regulations of the State Health Department for medical facilities.

The Medical Center maintains two diesel powered standby electrical generators, totaling 1300 kilowatts of capacity. These generators would assure the continued operational capability in case outside power were lost during a seismic disaster.

B. Vegetation and Wildlife

Utilize native vegetation in landscaping around new structures to increase habitat value. This measure will be given consideration during detailed landscape design at the time working drawings are prepared. Landscape plans will be developed in consultation with the Department of City Planning.

C. Water Quality

Completion of the foundation excavation and construction phases during the dry season would reduce the potential transport of sediment to the sewer system. The applicant will attempt to arrange for these construction phases to be completed during the dry season. Planned

implementation by the City of its Waste Water Master Plan will mitigate existing problems of wet weather overflow and sub-standard dry weather effluent treatment.

D. Noise

HELICOPTER OPERATIONS

The noise impact of proposed helicopter operations can be mitigated by several measures. The first, as a possible condition in the Conditional Use authorization, is to specifically limit the size of helicopters allowed to use the facility to light or medium weight machines which have turbine engines. The applicant would agree to this operational restriction except under disaster conditions which could result in grave emergencies.

Another mitigation measure which could be considered is the additional limitation of restricting use to daytime hours so as to avoid sleep disturbance. This measure would most likely eliminate the noise impact on the largest number of residents because of the fly-over noise during transit over the city. This measure would, however, reduce the usefulness of the facility for emergency service, and the applicant prefers not to limit the utility of the facility in this manner since the objective is to provide emergency care to save a life or lives.

Another mitigation measures would be a condition in the Conditional Use authorization that use of the helistop be restricted to emergency medical evacuation and disaster use, and that a log be kept which is available to the public describing the emergency nature of each incident requiring use of a helicopter. The applicant agrees to this condition since this is the proposed use as given in the project description.

CONSTRUCTION

Mitigation of construction noise can be accomplished by strict adherence by the contractor to the requirements of the City Noise Control Ordinance (No. 274-72). This requirement would be included in the construction contract agreements. This ordinance prohibits use of construction equipment which exceeds an 80 dBA noise level at 100 feet, and also requires a permit from the City Director of Public Works for conduct of any construction activity which exceeds the ambient noise level by 5 dBA at the nearest property line during nighttime hours. Specific criteria for conditions of a permit allowing noisy construction activities at night are included in the ordinance.

The applicant's architect has agreed to include in the specifications for new structures a requirement that the contractor comply with all sections of the Noise Control Ordinance.

E. Land Use

Preservation of existing planting strips, including the strip between Castro Street and the parking structure, and of the trees and shrubs presently maturing in those areas would maintain the Medical Center site as a facility screened by trees and shrubs. The Medical Center is committed to this measure.

F. Transportation

PHASE I

Location of the main entrance of the Research and Medical Office Building close to the east portal station of the Sunset Tunnel Muni Metro "N" line would provide the closest proximity to patients using public transit. The enclosed connection between the Research and Medical Office Building and the A level of the main Medical Center complex would also facilitate access to the other components of the Center by transit patrons utilizing the Muni Metro and would be convenient during inclement weather.

Conflicts between hospital-generated and through traffic at the main driveway entrance on Castro Street could be reduced through two devices. First, a tow-away zone could be established* during the peak morning and afternoon periods along a limited length of the west side of Castro Street opposite the hospital driveway. This would allow southbound through traffic to avoid southbound hospital motorists making left turns into the Center. Second, the pavement on the east side of Castro Street adjacent to the driveway could be marked "KEEP CLEAR".** This would open a path through cars awaiting the signals at Duboce Avenue and allow easier inbound and outbound movements by hospital vehicles.

*By the Board of Supervisors upon recommendation of the Traffic Engineering Division of the Bureau of Engineering and the Traffic Bureau of the Police Department. Previous resident opposition to existing tow-away zones would probably be reflected in resistance to this measure. The Traffic Engineering Division has indicated that it would not consider this measure (telephone communication, Norman Bray, August 18, 1976).

**By the Traffic Engineering Division of the Bureau of Engineering if this measure were favorably considered.

The conflict at Castro and 14th Streets between northbound and left-turning vehicles could be alleviated by extending* the red curbing on the southeast corner of Castro Street southward. This modification would allow through motorists to avoid the left turn interference but would eliminate some on-street parking.

PHASE II

In addition to the Phase I mitigation measures recommended for installation by 1980, a return to the parallel parking mode may be considered desirable for that portion of Noe Street between 14th Street and Duboce Avenue if conflicts between parking movements and through traffic cause congestion. Such a change of parking mode should be considered only after a survey of peak-hour congestion and an examination of accident reports indicate a warrant for such change.

G. Parking

Even though Phases I and II would increase the on-site parking capacity so as to more than adequately serve the peak period parking requirements associated with the Medical Center, estimates indicate continued problems for street parking nearby. Mitigation measures for this problem would include any practical approach to attract hospital visitors or staff to on-site parking without attracting non-hospital users. Such measures might include a reduction in monthly parking fees for the staff and a lower hourly rate for visitors. Probably a reduction in both staff and visitor rates would be necessary to free street parking since a reduction of staff rates would only free street space which would thus be used by visitors. Free parking for visitors with validated parking tickets would also mitigate demands for on-site parking.

In general the Medical Center management opposes such mitigation measures because they would require increased personnel for effective administration. The applicant points out that the Medical Center presently charges parking rates equal to or lower than other similar medical facilities in the City (see Appendix H, Page 155) and is proposing to provide more on-site parking spaces than required by the City ordinances. The Medical Center also provides a van service to transport patients who cannot use public transit.

*After consideration and a recommendation by the Traffic Engineering Division to the Board of Supervisors. [These latter two mitigation measures would be considered by the Traffic Engineering Division (telephone communication, Normay Bray, August 18, 1976).]

Free on-site parking for neighboring residents has been suggested by community spokesmen. The Medical Center management contends that this would pose a major problem of control and could overload facilities during peak periods of overlapping shifts. The Medical Center owns a residential parcel at 57 Noe Street (Lot 41, Block 3538) which it could improve and make available for parking by neighboring residents. Conversion to parking would require removal of the existing residential building on the parcel. This parcel is not a part of the Medical Center nor intended for use by the Center. The applicant has indicated a willingness to utilize this measure, provided the City and the neighbors approve.

These mitigation measures would facilitate automobile use by making parking more available. This is in conflict with the San Francisco planning objective to encourage the use of public transportation.

The Medical Center could encourage the use of public transit by a direct subsidy to staff members purchasing Muni monthly passes.

H. Energy

The highest potential for energy conservation measures is in the design of the Medical Research and Office Building and the Developmental Disability Center since the additions to the Acute Hospital are relatively minor and the basic design of the structure is fixed. Proposed Energy Conservation Standards for New Non-Residential Buildings are presently under public review and are expected to be adopted by the Energy Resources Conservation and Development Commission in the near future. These standards will require the analysis of a structure for total energy conservation with consideration of factors such as insulation; window area; heating, ventilation and cooling systems; water heating; and lighting standards. Upon adoption, these standards will become law in California and all new structures must conform. The project architect* indicates that the design of the new structures will conform to Energy Conservation Standards as finally adopted.

Measures which should be considered for space heating and cooling include:

- Adequate insulation and weather sealing to reduce heat loss and cooling loads.

- Reduce window area or use low-heat-loss windows.

*Personal communication, James D. Tustin; Sokoloff, Hamilton, Bennett; San Francisco, August 30, 1976.

- Operate structures to conserve energy by allowing a wider span for heating and cooling control temperatures.

- Use of cool outside air for interior cooling when conditions permit.

- Select equipment which has optimum energy use characteristics.

Measures which should be considered to reduce energy for lighting include:

- Establish reasonable lighting criteria to prevent over illumination.

- Design for use of natural lighting where possible.

- Use efficient light sources and luminaries.

- Minimize architectural lighting.

The use of solar heat collectors is another potential measure to conserve the use of fuels. Solar collectors are available for heating water which may be used for either hot water service or space heating. In San Francisco, a fixed solar collector system will deliver a minimum of 25,000 BTU/month/square foot of collector or approximately 50,000 BTU/month/square foot of horizontal roof area. For the Medical Research and Office Building (Phase I) a solar collector which covered the entire roof (about 10,000 square feet) would provide $5x10^8$ BTU/month which is 20 to 50 percent of the estimated natural gas consumption for the building (see Page The project architect is not presently considering the use of such solar collectors.

I. History and Archaeology

The lighting standards retained from the grounds and driveway serving the hospital built in 1905 on the Medical Center site would be retained in their present locations as a historical feature.

If, during the course of construction of proposed structures, any evidence of historic or archaeological significance is revealed, the contractor would be required to halt construction until a professional archaeologist could determine the significance of the finding and take appropriate measures.

J. Visual

Retention of older trees on the Castro Street frontage, as planned, would continue to enhance the visual aspect of the site. Limitation of signs to identifying signs against the walls of each building and to directional signs on the site would minimize the visual disruption which signs could cause. Conditional review of proposed signs, as a requirement of the Conditional Use authorization, would assure sign amenity.

As a condition of the use permit, the Planning Commission may require that final plans for each structure or building be approved by the Department of City Planning prior to filing for building permits.

K. Helicopter Operations

In addition to those mitigation measures indicated under noise considerations, other helicopter mitigation measures may be imposed with operational restrictions via the Airman's Information Manual. This FAA publication contains any operational restrictions which may be requested by the Helistop owner such as emergency use conditions and maximum safe wind speeds.

VI. UNAVOIDABLE ADVERSE EFFECTS

There are several types of adverse impacts which cannot be avoided if the proposed project is implemented. These will be briefly examined for the relevant impact areas with respect to human health, residential livability and general reduction of environmental quality.

CLIMATE

Shadows resulting from the addition to the acute hospital and the new Research and Medical Office building would affect portions of Duboce Park, particularly during afternoon periods in midwinter In addition, the Developmental Disability Center structure (Phase II) would cast shadows on residences during early morning and early evening hours of summer months.

NOISE

Helistop operations, even with light and medium weight turbine-powered helicopters, would create an unavoidable noise intrusion on residents in the immediate vicinity of the Medical Center. The frequency of occurrence may be up to 3 times per month with peak noise levels for residents of the immediate neighborhood being perceived as equivalent to a truck or motorcycle accelerating nearby. Use of piston engine-powered helicopters would result in higher noise levels.

Construction-generated noise would increase ambient levels for residences fronting on the Center, particularly during daytime hours, for much of the construction periods.

TRAFFIC

Increased volumes of traffic would be generated by both Phase I and II. The net estimated increase in Medical Center-generated vehicle trips per day is 1450 or 55 percent. Concentrations of carbon monoxide on nearby streets would be increased by less than 0.5 parts per million by Phase I and Phase II traffic. Noise levels would be raised by 1 dBA or less.

PARKING

Fewer local on-street parking spaces would be available during mid-day hours than at the present time as a result of increased Medical Center users unless measures are instituted to insure full use of on-site parking.

ENERGY

The proposed facilities (Phases I and II) would increase the annual energy consumption of the Medical Center by an estimated 11,300 barrels of oil or 35 percent unless solar energy were tapped.

VISUAL

The proposed addition to the acute hospital and the new structures would increase the mass of buildings on the site. The additional height of the elevator penthouse on the acute hospital would have an impact on views from some adjacent residences. The view corridors in approximately one-third of the Noe and 14th Street block faces which are presently open would be narrowed.

VII. ALTERNATIVES

Two types of alternatives to the proposed development plan of the Ralph K. Davies Medical Center may be considered. The first type would be in terms of the plan and project as a whole. The second would be in terms of the separate elements of the short-range and long-range development plans.

A. No Project

This alternative is of the first type described above. It would result in no change in the configuration of the buildings on the Medical Center site, no modifications to parking facilities, no addition to the structural profile. The capability of the Medical Center to respond to changing demands and requirements of health care would be dependent solely upon the feasibility of internal changes within the existing structures.

The Medical Center would continue to operate as it has, and most of the predicted impacts would not come about. However, the community would not benefit from the potential improvements in health care and efficiency of operation resulting from the continuing improvements.

B. Location of All New Facilities Elsewhere

This alternative would require the acquisition of a new site or sites and would result in a physical separation of parts of the Medical Center which would function more efficiently as an integral operating entity, in the opinion of the applicant. Like the "no project" alternative, this one would result in no impacts on the immediate vicinity of the Medical Center. Internally, administrative activities would continue to be divided between buildings as space would not be available for consolidation. The cited advantages to physicians and patients of having offices and examination facilities adjacent to the diagnostic, laboratory, and hospital facilities of the Medical Center would not be gained. The direct helicopter-to-emergency-room delivery of emergency patients or disaster victims would not be attainable, for

intervening ground transportation would be required to transfer patients. (Emergency landing at the ground level would not be feasible as the parking areas would be filled with vehicles, the ground areas are too small, too steep, or filled with trees, and the structural location pattern, upon completion of Phase II, would preclude a safe and acceptable flight angle.) This alternative could cause impacts at the other unspecified site or sites that might be involved, varying in magnitude according to the indeterminate site.

Consideration of alternatives to each of the separate principal elements contained in the development plan is described in the following sections.

C. Research and Medical Office Building

The Research and Medical Office Building, as proposed, would have its principal entrance and automobile passenger loading zone fronting on Noe Street. An alternative plan could place the principal entrance on the west side of the building on the second-level driveway and parking area that extends through the site from Duboce Avenue to 14th Street. If this alternative layout were adopted, all buildings at the Medical Center, existing and proposed, would have their entrances from on-site driveways and plazas. This would eliminate potential on-street friction between non-Medical Center traffic and vehicles stopping and loading at the Research and Medical Office Building. However, it would conflict with the delivery vehicles and loading functions on this driveway which functions as an off-street goods delivery and pickup area completely separated from other functions, and would interfere with the control of the automobile parking areas.

D. Helipad

An alternative to the rooftop location for the emergency helipad would be a ground level location. Such a location was given interim approval for a trial period in 1972 by Planning Commission Resolution No. 6888, but it was not developed for use. The superiority of the rooftop location includes the use of a flight angle free of buildings, wires, or other obstructions, and a higher flight elevation and consequent lessening of helicraft noise at the ground level. Direct circulation from the helipad to the emergency rooms would also result from the rooftop location. A ground level helipad would have to be remote from the Emergency Room and Acute Hospital and would require transport by gurney across parking areas and driveways, exposed to the weather.

A second alternative would be not to build a helipad and thus not provide the resultant capability of providing emergency treatment to victims of accidents in remote places or to respond to disaster situations. This would result in no assurance of available personnel and a planned response routine should medevac helicopters make emergency landings nearby, requiring ground transportation, in the event of disaster. Environmentally, this alternative would cause no impact as the airspace above the Medical Center and the nearby areas to the east and northwest would not be used by helicraft bound to or from the Medical Center.

A third alternative would be to build the helipad at a later time. This alternative would cause a second disruptive period of construction and would cost at least three times as much as the proposed construction phasing.

E. Parking

An alternative configuration of the parking structure at the southwest corner of the Medical Center site that would not extend the structure above the elevation of Castro Street would result if the third level of the western half of the structure were eliminated. This would reduce the number of parking spaces by 51, but the 398 spaces remaining under the short-range, Phase I plan, would be 22 more than needed to comply with the Planning Code requirements for the full Phase I development plan. This would result in a lower profile for the parking structure, thereby reducing awareness of its existence when viewing the Center from Castro Street. Pressure on the limited street parking would be increased, however, due to utilization by users of the Center, and costs of any future addition to the structure would be increased.

An alternative to the plan for diagonal on-street parking spaces on the Noe Street frontage would be the retention of parallel parking. This alternative, allowing for driveways and passenger loading at the entrance to the Research and Medical Office Building, would provide 18 spaces on this block face. Limitation of available parking space could provide incentive for use of public transit but could increase parking congestion on the street.

F. Developmental Disability Building

If this Phase II building were not built, additional parking, planned for development on three levels on Noe Street, would not be required. Existing parking areas, screened by trees and shrubs, would be retained on Noe and 14th Streets, thereby retaining the non-structural openness on the Medical Center site opposite the dwellings on Noe and 14th Streets. This alternative would have a restrictive impact on the long-range objectives of the Medical Center.

G. Building to Maximum Dimensions Permitted by the Planning Code

Section 125 of the Planning Code permits coverage of 206,965 square feet, or 66 percent, of the 313,600 square foot site by buildings. The Phase I development plan when completed would result in a total building coverage of 137,840 square feet, or 44 percent. Phase II would add 15,616 square feet in parking structure #2 and 17,108 square feet in the Developmental Disabilities Center, making a total coverage of 170,564 square feet or 54 percent of the site and 87 percent of the permitted coverage.

Section 122.1 of the Planning Code permits a floor area for buildings other than dwellings in an R-3 district 1.8 times the lot area. Thus, the allowable floor area on the Ralph K. Davies site is 564,480 square feet. The short-range, Phase I, plan would provide a gross floor area of 382,687 square feet or 66 percent of permitted space. The total gross floor area upon completion of the long-range plan would be 434,387 square feet, the Developmental Disabilities Building adding 51,700 gross square feet. Thus, upon completion as proposed, the total floor area would be approximately 78 percent of that permitted. If built to the total floor area permitted the trips generated would be approximately twice those resulting from Phase I and II.

If built to utilize the full coverage and floor area permitted, the configuration of the Center would assume proportions more massive than proposed. This could be either in the form of additional lower buildings covering more of the site or additional floors on the Franklin Medical Office Building, the acute hospital, the Diagnostic Center and the Rehabilitation Center up to the permitted height limits of 65 feet above grade (130 feet for the hospital).

In regard to the relative energy consumption associated with the alternatives discussed above, the "no project" alternative would consume no additional energy assuming that facilities were not built elsewhere. If the proposed facilities are built elsewhere, energy consumption would be closely equivalent to the proposed facilities at the Medical Center. The alternative to develop the site to maximum dimensions permitted by the Planning Code would increase energy consumption approximately 50 percent beyond the proposed facilities.

VIII. THE RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

Among the cumulative impacts of the proposed expansion project is the intensification of the use of the site as a medical center. Each increment of development would add a structural element to the site and increase the number of persons and vehicles traveling each day to and from the site. Upon completion of the project as proposed, the number of daily trip ends generated by the Medical Center would increase from 2,600 to 4,050.

Generation of additional employment and patient visits at the site would result in a 4 percent increase of vehicular traffic and a 2 percent increase in demand for public transit service. The increased intensity of use would result in some adverse impacts with regard to air quality, noise, shadows, and views.

The proposed project would preclude future options for the use of the site in the short run, but would continue the long-term, 100-year use of the site for health care purposes, albeit more intensively. Implementation of the project as proposed would further commit the site to long-term medical use. Conversely, expansion of health care facilities on this site would lessen the feasibility of locating such facilities elsewhere in the Bay Area.

Committing the remaining developable portion of the site to buildings and parking structures would commit the areas to long-term use as part of the Medical Center, precluding other uses. The development is taking place now in response to the need for medical services, particularly the growth of outpatient services as shown in Section II C. Since the Medical Center owns the entire site and is unlikely to develop the proposed facilities elsewhere, denying the Medical Center the use of these portions of its site would not allow realization of its program for expanded services as described in Section II.

IX. IRREVERSIBLE CHANGES WHICH WOULD BE INVOLVED IN THE PROPOSED ACTION SHOULD IT BE IMPLEMENTED

Once developed, reversion of the site to its present state would be unlikely. Continued use of the buildings and site for the provision of health care services is likely during the foreseeable future in which the buildings would be safe and serviceable. Thus, a larger fraction of the site would be covered by buildings or structures and its use would be more intensive. Non-renewable energy and material resources would be expended during construction and during the subsequent use of the site and facilities. This expenditure of resources is a factor of use rather than site, and would occur wherever such health care facilities of the type proposed were located.

Final operation of the expanded facilities would result in the expansion of services which might generate hazardous chemicals, pathological and radioactive wastes. The Medical Center indicates that it has not experienced or been responsible for any environmental accidents in connection with the treatment and disposal of hazardous wastes. Continued compliance with State regulations governing wastes which may pose a danger to public health is relied upon to avoid environmental accidents.

An earthquake of an intensity in excess of that for which the proposed structures are designed to withstand (1906 intensity) may result in more casualties than would be experienced in single-story wood-frame structures.

X. GROWTH-INDUCING IMPACTS

Upon completion of Phase II, Ralph K. Davies Medical Center would support an estimated 165 additional employees over present levels. It is expected that these employees would, in turn, generate further income and employment, especially in the service sector, as a result of new consumption spending. These impacts, however, would be spread over the San Francisco Bay Area and therefore would not be directly felt in the vicinity of the Center. Furthermore, net increases in employment would not necessarily equal total increases caused directly or indirectly by the Medical Center. Net effects would depend on the number of new people coming from outside the metropolitan area as well as the overall reduction of unemployment. Some of the increase, for example, may simply show up as intra-Bay Area transfers in employment.

In a similar fashion, the effects on population growth would depend on the net migration of families to the region. Accordingly, no direct population impacts from the project are expected. Residential growth in the vicinity of the Medical Center as a result of the project would be unaffected if the more restrictive zoning proposed becomes permanently effective.

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6221 Geary Boulevard
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668-5404
Edward P. Joyce
Thomas Jenkin

San Francisco Municipal Railway (Public Transit)
Geary Boulevard at Presidio Avenue
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558-5441
James J. Finn, Director of Transportation
Lawrence Sauve

Arthur B. Smith, Jr. (Structural Engineering)
Registered Structural Engineer, #533, retired.
No current address or phone number

San Francisco Fire Department
260 Golden Gate Avenue
San Francisco, CA
Robert E. Rose, Chief, Division of Planning and Research

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APPENDIX A

RESOLUTION NO. 5803

WHEREAS, The City Planning Commission on January 2, July 2 and July 16, 1964 heard Application No. CU64.1 for a Conditional Use under Section 304 of the City Planning Code for a new MEDICAL CENTER including a 370-bed general hospital, a 400-bed convalescent hospital, a medical research building and a medical office building in an R-3 district on the property described as follows:

The existing Franklin Hospital block bounded by Duboce Ave., Noe, Castro and 14th Streets; Lot 1 in Assessor's Block 3539;

WHEREAS, Franklin Hospital has been a longstanding and accepted institution in this neighborhood;

WHEREAS, The existing facilities of this hospital must be replaced and expanded so that the hospital can provide the type and level of medical service necessary for the public health of the residents of San Francisco;

WHEREAS, The proposed master plan reviewed by the Planning Commission on July 2, 1964 for replacement and expansion of the hospital on this site would result in a medical complex which would meet such medical needs and be compatible with the surrounding low-medium-density residential neighborhood;

WHEREAS, The applicant will proceed with the more definite design of buildings included in the master site plan in consultation with the Department of City Planning and mindful of the needs of the surrounding residential properties for the protection, as far as practical, from undue commercial activity and of existing light, air and views;

THEREFORE BE IT RESOLVED, That the City Planning Commission finds that the conditions set forth in Section 304.3 of the City Planning Code are met and said CONDITIONAL USE is hereby AUTHORIZED in accordance with standards specified in the City Planning Code and subject to further conditions as follows:

1. Said Conditional Use is authorized in terms of the master plan document titled "Franklin Hospital Foundation, a Critical Review of Franklin Hospital's Present Situation, Community Needs in San Francisco, and the Proposed Redevelopment Plan for Franklin Hospital" by John Y. James dated July 1964, and in general conformity with the plans and descriptive material by Stone, Marraccini and Patterson, dated June 26 and 30, 1964, marked Exhibit A and filed with this application which show the location of the proposed buildings and their proposed height, bulk, number and location of off-street parking areas, and vehicular entrances and exits.

2. The 250 bed (Stage I) to 370 bed (Stage II-B) hospital shall be in general conformity with the plans titled "Hospital Building, Franklin Hospital Foundation" by Stone, Marraccini and Patterson, dated (revised) April 30, 1964, marked Exhibit B and filed with this application. Said hospital shall not exceed a height of 340 feet, which would be approximately 124 feet above Castro Street.

3. Plans for the remaining buildings included in the above-mentioned master plan (two long-term care units, medical office building, parking garage, and research and education building), which have not been designed in detail at the date of this authorization, shall be developed in consultation with the Department of City Planning. Said buildings shall be designed with the lowest possible height above Castro Street, and final preliminary plans consistent with the master plan shall be submitted to the City Planning Commission for approval prior to filing for any building permits for these buildings.

4. Vehicular entrances and exits for this medical complex shall be placed generally as depicted by Exhibits A and B, and necessary traffic controls shall be developed in the manner suggested by the Department of City Planning in consultation with the Bureau of Traffic Engineering. Off-street parking shall be provided in a manner which will minimize the demand generated by this medical complex for curb parking outside of the immediately adjacent streets.

5. The placement and construction of the buildings shall be such to maintain as much as practical the existing landscaping of shrubs and trees. A landscaping plan showing grading and planting materials shall be submitted to the Department of City Planning for approval prior to filing for any building permits pursuant to each of the three phases of building construction described in the above-mentioned master plan.

6. Signs within the Medical complex shall be limited to identifying signs flush against the walls of the buildings and directional signs for off-street parking areas.

7. Final plans for each new building in this medical complex, for landscaping and for signs shall be consistent with Exhibits A and B and the provisions of this Resolution and shall be submitted for review and approval by the City Planning Commission prior to the application for grading and building permits for the area covered by each such building.

I hereby certify that the foregoing Resolution was adopted by the City Planning Commission at its regular meeting on July 16, 1964.

Lynn E. Pio
Secretary

Ayes: Commissioners Baum, Porter, Kearney, Pelosi, Duckel
Noes: Commissioner Brinton
Absent: Commissioner Carr
Passed: July 16, 1964

APPENDIX B

CITY PLANNING COMMISSION
RESOLUTION NO. 5852

WHEREAS, The City Planning Commission on January 7, 1965 heard Application No. CU65.2 for a Conditional Use under Section 304 of the City Planning Code thereby permitting MODIFICATION OF THE SITE PLAN included in Resolution No. 5803, which authorized a rebuilding and expansion of Franklin Hospital in an R-3 district on the property described as follows:

The Franklin Hospital block bounded by Duboce Avenue, Noe, Castro, and 14th Streets; Lot 1 in Assessor's Block 3539; in an R-3 (Low-Medium Density Multiple Residential) zoning district.

WHEREAS, Franklin Hospital has been a longstanding and accepted institution in this neighborhood;

WHEREAS, The existing facilities of this hospital must be replaced and expanded so that the hospital can provide the type and level of medical service necessary for the public health of the residents of San Francisco;

WHEREAS, Since the authorization for said expansion was approved under Resolution No. 5803 by the City Planning Commission on July 16, 1964, which culminated a period of six months during which a series or preliminary plans were reviewed by the City Planning Commission, additional studies by Franklin Hospital for final building plans have determined that modification of the master site plan approved by the City Planning Commission in Resolution No. 5803 would create a more reasonable and efficient plan for the proposed medical complex;

WHEREAS, The City Planning Commission feels that the proposed changes, as conditioned in this present Resolution, will result in a superior grouping of medical facilities on this hospital block without undue detrimental effect on the surrounding residential neighborhood;

THEREFORE BE IT RESOLVED, That the City Planning Commission finds that the conditions set forth in Section 304.3 of the City Planning Code are met and said CONDITIONAL USE is hereby AUTHORIZED in accordance with standards specified in the City Planning Code and subject to further conditions as follows:

1. This authorization shall supercede that provided under Resolution No. 5803 and permits the rebuilding and expansion of Franklin Hospital and accessory medical facilities in terms of the site plan marked Exhibit A by Stone, Marraccini and Patterson dated December 14, 1964 filed with this application. Said plan depicts the building location, bulk and heights, driveways and parking areas, and landscaped areas for a hospital building at the Duboce Avenue frontage of the subject block midway between Castro and

Noe Streets, two long term care medical buildings to the south of the hospital, a medical research building at the southwest corner of Noe Street and Duboce Avenue, a medical office building at the southeast corner of Castro Street and Duboce Avenue, and a parking structure at the northeast corner of 14th and Castro Streets. The location of surface parking and landscaped areas of the first phase of rebuilding, which would include the hospital building, one long term care medical building and the medical office building, are shown on the site plan marked Exhibit B by Stone, Marraccini and Patterson dated November 18, 1964 and filed with this application.

2. The 250 bed (1st phase) hospital and the first of the long term medical care buildings shall be in conformity with the preliminary final plans titled "Franklin Hospital Foundation" dated December 1, 1964 and approved by the City Planning Commission on December 3, 1964; expansion of the hospital to 370 beds (2nd phase) shall be in terms of the above mentioned Exhibit A and shall not exceed a penthouse roof elevation of 332 feet above city base.

3. All entrances and exits, except fire and other emergency exits, for the medical office building shall be provided along the plaza between the office building and the hospital. The building setback from Castro Street of not less than 19 feet shall be landscaped. The roof of medical office building shall not exceed an elevation of 258 feet above city base and the parapet and penthouse shall not exceed elevations of 260.5 and 268 feet, respectively, as shown on said Exhibits.

4. Vehicular entrances and exits for this medical center shall be placed as depicted on Exhibit A, with grades in the area of the plaza between the hospital and medical office building generally as depicted on the plan marked Exhibit C by Stone, Marraccini and Patterson dated December 14,1964 and filed with this application. Necessary traffic controls for all entrances and exits to provide efficient and safe traffic circulation shall be developed in the manner suggested by the Department of City Planning and the Bureau of Traffic Engineering, with particular limitation of the ingress and egress of traffic at the entrance between the hospital and medical office building to only the east bound lane of Duboce Avenue. Off-street parking shall be provided in a manner which will minimize the demand generated by this medical complex for curb parking outside of the immediately adjacent streets.

5. The placement and construction of the buildings shall be such to maintain as much as practical the existing landscaping of shrubs and trees, particularly along the Castro Street frontage of the subject block. A landscaping plan showing grading and planting materials shall be submitted to the Department of City Planning for approval prior to filing for any building permits pursuant to each phase of building construction described in the above mentioned plans.

6. Signs within the medical center shall be limited to identifying signs flush against the walls of the buildings and directional signs for off-street parking areas.

7. Final plans for each building shall be approved by the Department of City Planning for conformity to these Conditions prior to filing for building permits required for each building.

I hereby certify that the foregoing Resolution was adopted by the City Planning Commission at its regular meeting on January 7, 1965.

Lynn E. Pio
Secretary

Ayes: Commissioners Brinton, Elliott, Kearney, Pelosi, Porter, Willard
Noes: None
Absent: Commissioner Carr
Passed: January 7, 1965

APPENDIX C

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

AIRPORT DISTRICT OFFICE
831 Mitten Road
Burlingame, California 94010

October 17, 1973

Mr. Jack Hauser
Vice-President, Administration
Ralph K. Davies Medical Center
Castro & Duboce Streets
San Francisco, California 94114

Dear Mr. Hauser:

We have reviewed the Notice of Landing Area Proposal for your proposed modification of Davies Heliostop (private use) located in San Francisco, California (Case No. 72-SFO-46-NRA, Amendment No. 1).

Your proposal is acceptable from an airspace utilization standpoint. This determination should not be construed to mean FAA approval of the physical development involved in the proposal. It is a determination with respect to the safe and efficient use of the airspace by aircraft, and the effect the proposal would have on the existing airspace structure. This determination in no way preempts or waives any ordinances, laws or regulations of any other governmental body or agency.

The FAA cannot prevent construction of structures near your heliostop. This airspace can only be protected through local zoning ordinances or acquisition of property rights.

No environmental determination has been made in reaching this determination which is based on the safe and efficient use of airspace. Therefore, this determination is not to be construed as approval of the proposed heliostop from an environmental standpoint under Public Law 91-258, "Airport and Airway Development Act of 1970."

Please complete and return the enclosed facilities information request, FAA Form 5010-2, when the heliostop is commissioned.

Sincerely,

C. G. HAND
Chief, Airport District Office, SFO-600

Enclosure

APPENDIX D

TRAFFIC AND PARKING PROJECTIONS

The motor vehicle trip generation factors used in the preparation of this report were based on the trip ends generation studies conducted by the California Department of Transportation (Caltrans, 1970 and 1974) and modified to reflect the public transit usage indicated by the Medical Center's survey of March, 1974. It was assumed for the purposes of this report that public transit usage as a percent of auto trip generation will remain constant through Phase II. The magnitude of the peak hour fluxes (i.e., percent of average daily traffic) was based mainly on the Caltrans research while the timing of these peak periods was based on movements observed in the March 1974 survey. The resulting traffic and transit projection for Phases I and II are shown in Tables IV-3, Page 86, and IV-4, Page 99.

The fifth floor addition scheduled for completion in Phase I was assumed to have normal business office traffic-generating characteristics resulting in a weekday traffic generation of 4.2 auto trip ends per 1,000 square feet, adjusted for transit usage (Caltrans, 1974). The research portion of the research and medical office building was assumed to have industrial research and development traffic-generating characteristics giving a weekday traffic generation of 4.7 auto trip ends per 1,000 square feet, adjusted for transit usage (Caltrans, 1974). The medical office portion would generate 30.7 weekday auto trip ends per 1,000 square feet, adjusted for transit usage (Caltrans, 1970).

The research/training space scheduled for Phase II was assumed to have the auto operation characteristics of an industrial research institute. This resulted in a weekday auto generation of 4.7 trip ends per 1,000 square feet, adjusted for transit usage (Caltrans, 1970). The treatment/office was expected to provide significantly longer treatment sessions because of its developmental disability facilities than would a regular medical office. Therefore, its weekday trip ends generation rate would be about one-half that of a regular medical office, or about 15.3 trip ends per 1,000 square feet.

The traffic generation values shown in Table IV-3, Page 86, for the present and future hospital facilities represent motor vehicle (auto, taxi, truck) trip ends which are composed of both the arrival and departure legs. For example, the 24-hour present facility generation of 2,600 vehicle trips represents 1,300 arrivals and 1,300 departures (i.e., the results of 1,300 round trips). A poll taken by the hospital in March, 1974, indicated that of the approximately 1,300 incoming auto trips, 969 persons drove themselves and 290 persons were auto passengers. For the purposes of this report it was assumed that this ratio will remain constant. Figure III-5, Page 54, indicates that 573 vehicles parked in the hospital parking lots during the course of the hourly 6 AM to 9 PM survey conducted in October, 1975. Since the present facility is estimated to attract a total of approximately 1,300 vehicles per day, the movements of the remaining 727 vehicles can be accounted for by referring to the March, 1974 survey conducted by the hospital. This survey indicates that in addition to the 573 autos that were counted in the on-site parking lots, 63 autos parked in the lots but were not counted because they arrived and departed between the hourly surveys, 28 autos were not counted because they arrived and departed between 9 PM and 6 AM, 329 autos parked on nearby streets (probable stay time less than two hours per car), and 290 vehicles (autos, taxis, trucks) were at the Center only long enough to discharge passengers.

APPENDIX E

RALPH K. DAVIES AREA PARKING SURVEY

QUESTIONS

(1) Have you found on-street parking difficult?

(2) If so, when are the most difficult periods for you?

a. Weekdays, Saturday, Sunday
b. Time of day (which one or several?) -- morning, noon, afternoon, evening, or night

(3) How many cars are kept by the occupant or flat?

(4) How many off-street parking places or garages are available for this house or flat?

APPENDIX F

LEVELS OF SERVICE

Level of service A describes a condition of free flow, with low volumes and high speeds. Traffic density is low, with speeds controlled by driver desires, speed limits, and physical roadway conditions. There is little or no restriction in maneuverability due to the presence of other vehicles, and drivers can maintain their desired speeds with little or no delay.

Level of service B is in the zone of stable flow, with operating speeds beginning to be restricted somewhat by traffic conditions. Drivers still have reasonable freedom to select their speed and lane of operation. Reductions in speed are not unreasonable, with a low probability of traffic flow being restricted. The lower limit (lowest speed, highest volume) of this level of service has been associated with service volumes used in the design of rural highways.

Level of service C is still in the zone of stable flow, but speeds and maneuverability are more closely controlled by the higher volumes. Most of the drivers are restricted in their freedom to select their own speed, change lanes, or pass. A relatively satisfactory operating speed is still obtained, with service volumes perhaps suitable for urban design practice.

Level of service D approaches unstable flow, with tolerable operating speeds being maintained though considerably affected by changes in operating conditions. Fluctuations in volume and temporary restrictions to flow may cause substantial drops in operating speeds. Drivers have little freedom to maneuver, and comfort and convenience are low, but conditions can be tolerated for short periods of time.

Level of service E cannot be described by speed alone, but represents operations at even lower operating speeds than in level D, with volumes at or near the capacity of the highway. Flow is unstable, and there may be stoppages of momentary duration.

Level of service F describes forced flow operation at low speeds, where volumes are below capacity. These conditions usually result from queues of vehicles backing up from a restriction downstream. The section under study will be serving as a storage area during parts or all of the peak hour. Speeds are reduced substantially and stoppages may occur for short or long periods of time because of the downstream congestion. In the extreme, both speed and volume can drop to zero.*

*Source: Highway Research Board, 1966.

APPENDIX G

EMERGENCY HELIPADS IN THE BAY AREA

The development and use of emergency helipads at Bay Area medical centers is a relatively new aspect of emergency medical service that is being established throughout the U.S.

In the Bay Area emergency rescue service is provided primarily by governmental agencies--the Coast Guard, the California Highway Patrol, and the East Bay Regional Parks District. Use of the service is infrequent because it is emergency in nature, and is a search and rescue "medevac" (medical evacuation) service provided in circumstances or locations where high-speed ground transportation cannot reach the victims. The Coast Guard rescues persons stranded on ocean cliffs, victims of boat accidents, or persons who are aboard a boat when seized by a sudden need for quick emergency treatment. The Highway Patrol provides medevac service where time-distance is an important factor and when ground access is blocked. The East Bay Regional Parks District evacuates victims of falls, snake bites, or sudden incapacity from remote areas in its park system that are not accessible by ground vehicles. The service provided is a life-saving service because time between the accident or seizure and treatment is the essential factor determining the likelihood of survival.

The Coast Guard averages three emergency flights per month, with a peak of eight to ten in the summer months*. The California Highway Patrol helicopter is used daily for patrol and serves in an emergency rescue role about once every three months**. The East Bay Regional Parks District averages one rescue a week, and more during the summer***.

*Telephone conversation, Ensign Shaeffer, U.S. Coast Guard Rescue Service, San Francisco Airport, November 3, 1975.
**Telephone conversation, California Highway Patrol, San Francisco, November 3, 1975.
***Telephone conversation, Chief Larry Olson, East Bay Regional Parks, Public Safety, November 3, 1975.

The helicraft providing medevac services generally fly to the hospital that is closest to the evacuation site and which provides helipad facilities. On occasion, however, hospitals are used that are not served by a helipad but which are near an open area where, in the judgment of the pilot, a safe landing can be made.

The helicraft used in this service are non-military and are much less noisy than those used in military evacuation. The Coast Guard uses the largest craft, a Sikorsky S-62. The Highway Patrol has one Fairchild-Hiller 1100, a considerably lighter craft. The East Bay Regional Parks District uses the Bell 47G and the Hughes 500.

Bay Area hospitals which presently have helipad facilities include Peninsula Hospital and Medical Center in Burlingame, the Stanford University Medical Center at Stanford, the Santa Clara Valley Medical Center in San Jose, the St. Rose Hospital in Hayward, the John Muir Hospital in Walnut Creek, and the Brookside Hospital in San Pablo. All of these facilities are at ground level; none are in San Francisco.

Use of the facilities is infrequent. The Valley Medical Center in San Jose experiences the greatest use--two to four times per month--as the Center is a designated regional spinal cord injury center serving patients throughout Northern California*.

Peninsula Hospital and Medical Center experiences use of its facility on the average of once every three months, primarily by the Coast Guard**. Use of the St. Rose helipad runs in cycles. There were seven uses in the first 18 months of operation, including burn victims from an accident on the San Mateo Bridge. The East Bay Regional Parks District brought in three cases in one week--two snake bite victims and one glider crash victim+. Brookside Hospital in San Pablo has experienced an average emergency landing once a year since opening in 1971. Coast Guard patients have included persons rescued from capsized boats and a bicycle accident victim from Angel Island who suffered severe head injuries. Ground transportation could not have served such emergency patients. Though its use is infrequent, it is considered a useful adjunct to the hospital since it has saved lives++.

*Telephone conversation, Leo Smith, Administrator, Santa Clara Valley Medical Center, October 22, 1975.
**Telephone conversation, James Pappas, Assistant Administrator, Peninsula Hospital, October 24, 1975.
+Telephone conversation, Walter Philkowski, St. Rose Hospital, October 28, 1975.
++Telephone conversation, Mrs. James, Administration Office, Brookside Hospital, October 22, 1975.

The emergency service agencies described have also landed at Marin General Hospital, using a nearby football field; Valley Memorial Hospital in Livermore; and Washington Hospital in Fremont, although these hospitals do not have helipads. In addition, in San Francisco, the Coast Guard lands at Crissey Field in the Presidio where ground transportation is provided, usually to nearby Letterman General Hospital. Although the real use of any one facility is infrequent, the life-saving value is deemed to warrant the capability to utilize helicopter medevac service wherever feasible. As one rescue craft pilot stated, "doctors have told us that persons would not have survived without our service"*.

In addition to the emergency rescue use, all of the hospital and medical center helipads in the Bay Area have been used in disaster drills which have been held to test emergency capabilities and gain experience for application to a real disaster resulting from an earthquake, fire, crash, or explosion.

*Telephone conversation, Chief Larry Olson, Division of Public Safety, East Bay Regional Parks District, November 3, 1975.

APPENDIX H

DAILY VISITOR HOSPITAL PARKING FEES, SAN FRANCISCO, 1976

1. Children's Hospital of San Francisco:
   $ .50 per hour
   $2.50 maximum

2. French Hospital:
   $ .45 per half hour
   $2.75 maximum

3. Kaiser-Permanente Medical Foundation:
   $ .50 per two hours

4. Mt. Zion Hospital and Medical Center:
   (no parking on-site; commercial lot on west side of Divisadero)
   $ .40 per half hour
   $2.75 maximum

5. Presbyterian Hospital and Pacific Medical Center:
   $ .45 per half hour
   $2.50 maximum

6. Ralph K. Davies Medical Center:
   $ .50 per hour
   $2.50 maximum
   ($1.35 maximum for hemodialysis patients)

7. St. Francis Memorial Hospital:
   $1.30 per hour
   $3.00 maximum

8. St. Luke's Hospital and Monteagle Medical Center:
   $ .50 per hour
   $2.50 maximum

9. St. Mary's Hospital and Medical Center:
   $ .60 first hour
   $ .50 succeeding hours
   $1.80 maximum

10. San Francisco General Hospital Medical Center:
   Permit parking only

11. University of California Medical Center
   $ .50 per hour
   $2.50 maximum

APPENDIX I

DAILY TRIP SURVEY FOR THE MEDICAL CENTER

DAILY PERSON TRIPS TO RALPH K. DAVIES MEDICAL CENTER, FRANKLIN HOSPITAL

TABULATED BY HOUR OF ARRIVAL AND MODE *

HR. ENDING	BUS	TAXI	WALK	AUTO DRIVEN	AUTO PASS	TRUCK DRIVEN	TRUCK PASS	TOTAL
5 A.M.	---	---	---	---	---	---	---	---
6	6	2	2	6	4	1	2	23
7	78	6	15	129	42	2	---	272
8	78	5	39	147	38	4	1	312
9	54	3	14	122	17	1	---	211
10	61	2	15	74	15	2	1	170
11	42	1	12	43	17	2	---	117
12 NOON	45	1	17	57	19	1	2	142
1 P.M.	22	5	16	48	5	3	---	99
2	24	3	12	34	8	1	---	82
3	19	---	18	78	27	---	---	142
4	8	---	9	52	12	---	1	82
5	10	---	14	31	9	2	---	66
6	5	3	14	28	11	1	1	63
7	17	6	22	59	4	3	4	115
8	15	1	5	21	3	1	---	46
9	6	1	4	12	2	---	---	25
10	8	---	---	10	---	---	---	18
11	5	---	---	2	---	---	---	7
12 MIDNIGHT	4	1	2	16	4	---	1	28
TOTAL	507	40	230	969	237	24	13	2020

* Data gathered on Wednesday March 20, 1974

DAILY PERSON TRIPS TO RALPH K. DAVIES MEDICAL CENTER FRANKLIN HOSPITAL CLASSIFIED BY PURPOSE AND MODE *

MODE OF TRAVEL	DOCTORS	NURSES	EMPLOYEES	IN-PATIENTS	OUT-PATIENTS	MOB PATIENTS	PATIENT VISITORS	BUSINESS VISITORS	VOLUN-TEERS	GOODS DELIVERY	TOTAL
BUS	5	84	172	34	6	34	168	---	4	---	507
TAXI	2	4	4	10	11	4	3	2	---	---	40
WALK	8	22	99	2	10	40	48	---	1	---	230
AUTO DRIVEN	138	74	232	90	26	200	106	65	6	32	969
AUTO PASSENGER	19	12	60	37	27	40	34	---	4	4	237
TRUCK DRIVEN	---	2	6	3	3	---	2	---	---	8	24
TRUCK PASSENGER	---	1	5	2	2	2	1	---	---	---	13
TOTAL	172	199	578	178	85	320	362	67	15	44	2020

* Data gathered on Wednesday, March 20, 1974.

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